SUMMARY OF STATE LABOR LAWS FOR WOMEN
August 1944

1. - DAILY AND WEEKLY HOURS

Forty-three States and the District of Columbia have laws limiting the daily and weekly hours of employment in one or more industries.

Five States - Alabama, Florida, Indiana, Iowa, and West Virginia - do not have such laws.

One-half of the States (24) and the District of Columbia have set 8 hours a day and/or 48 hours a week or less as the maximum time a woman may be employed in one or more industries. 1/ In 23 of the 24 States (Kansas is the exception), manufacturing establishments are covered by such standards. South Carolina's statute, however, covers only one branch of manufacturing - textile mills. In Connecticut, the maximum workweek is 48 hours for several industries; daily hours may not exceed 8 in mercantile establishments nor 9 in manufacturing plants. The 8-48 hours law in Kansas applies to public housekeeping occupations and telephone exchanges; in manufacturing establishments, the maximum is 9 hours a day, 49½ hours a week.

Arizona	8 - 48	New Mexico	8 - 48
California	8 - 48	New York	8 - 48
Colorado	8 ---	North Carolina	8 - 48
Connecticut	8 - 48	North Dakota	8 - 48
	9 - 48	Ohio	8 - 45
District of Columbia	8 - 48	Oregon	8 - 44
Illinois	8 - 48	Pennsylvania	8 - 44
Kansas	8 - 48	Rhode Island	9 - 48
Louisiana	8 - 48	South Carolina	8 - 40 (Men and women) 2/
Massachusetts	9 - 48	Utah	8 - 48
Montana	8 ~~- 48~~	Virginia	9 - 48
Nevada	8 - 48	Washington	8 ---
New Hampshire	10 - 48	Wyoming	8 - 48

Ten States have set a maximum 9-hour day for women and the weekly maximum in all but one of these (Idaho) is 49½, 50, or 54 hours. Arkansas has no weekly hours specified in its statute but it has a 6-day-week provision, which in effect makes a 54-hour maximum week.

Arkansas	9 - 6 days	Nebraska	9 - 54
Idaho	9 ---	Oklahoma	9 - 54
~~Kansas~~	~~9 - 49½~~	Texas	9 - 54
Maine	9 - 54	Vermont	9 - 50
Michigan	9 - 54	Wisconsin	9 - 50
Missouri	9 - 54		

1/ For States with different legal maximum hour standards for different industries, the law establishing the lowest maximum hours was selected for this summary.

2/ Temporarily this law is not being enforced.

Eight States have set a maximum day of 10 hours and a week of from 54 to 60 hours. In 2 of these - Georgia and South Carolina - the law applies to one type of manufacturing plants only - cotton and woolen mills.

Delaware	10 - 55	Mississippi	10 - 60 (Men and Women)
Georgia	10 - 60	New Jersey	10 - 54
Kentucky	10 - 60	South Carolina	10 - 55 (Men and Women)
Maryland	10 - 60	South Dakota	10 - 54

In one State - Tennessee - the maximum is 10½ hours a day, 57 hours a week. This applies to manufacturing and other industries.

Minnesota has fixed no daily limit in its statute, having only a 54-hour weekly limitation for manufacturing establishments and several other industries.

2. - DAY OF REST

About half the States (23) and the District of Columbia prohibit employment of women for more than 6 days a week. In 2 of these States - Colorado and Utah - the law does not apply to manufacturing establishments.

Arizona	Kansas	Ohio
Arkansas	Massachusetts (Men and women)	Oregon
California	Louisiana	Pennsylvania (5½ days
Colorado	Nevada	South Carolina
Connecticut	New Hampshire (Men and women)	Utah
District of Columbia	New Jersey	Washington
Delaware	New York (Men and women)	Wisconsin (Men and women)
Illinois (Men and women)	North Carolina	
	North Dakota	

3. - MEAL PERIODS

Well over half the States (27) and the District of Columbia have provided that meal periods varying from 1/3 hour to 1 hour must be allowed for meals. This provision applies to manufacturing establishments in all but 5 of these States - Colorado, Illinois, Nebraska, North Carolina, and Washington. The States are as follows:

Arkansas	Louisiana	North Carolina
California	Maine	North Dakota
Colorado	Maryland	Ohio
District of Columbia	Massachusetts	Oregon
Delaware	Nebraska (Men and women)	Pennsylvania
Illinois	Nevada	Rhode Island
Indiana (Men and women)	New Jersey (Men and women)	Utah
Kansas	New Mexico	Washington
Kentucky	New York (Men and women)	West Virginia
		Wisconsin

4. - REST PERIODS

Rest periods of 10 minutes after a work period of 4 consecutive hours or during each half day are provided for in the laws of Colorado, Oregon, and Utah. These are applicable usually to retail-trade employees. In California if nature of work requires continuous standing, the industrial welfare commission may require that 10-minute rest periods be given after 2 or 2½ hours of work.

5. - NIGHT WORK

Twenty-two States and the District of Columbia have some requirement regarding employment of women at night. The laws of 2 of these States - Maryland and New Hampshire - have no prohibitive period though they do limit the hours a woman may work at night to 8. (The daily maximum in these States is 10 and 10½ hours, respectively.) New Mexico increases its weekly limit for night work in telephone and telegraph offices to 54 hours (for day work, hours in this industry may not exceed 48).

In 4 States - Arizona, Kentucky, Rhode Island, and Virginia[1] and the District of Columbia - the only limitation on night work applies to persons (in Virginia and the District of Columbia, girls) under 21 in messenger service.

The following 15 States prohibit night work for women in certain industries or occupations. In Ohio and in Washington only one very small group of women workers is covered, ticket sellers in the former and elevator operators in the latter.

California
Connecticut
Delaware
Indiana
Kansas
Massachusetts
Nebraska
New Jersey
New York
North Dakota
Ohio
Pennsylvania
South Carolina
Washington
Wisconsin

6. - SEATING

Forty-six States and the District of Columbia have seating laws - all but 1 of them applying exclusively to women. Florida's law applies to both males and females.

Illinois and Mississippi have no seating laws.

4. - REST PERIODS

Rest periods of 10 minutes after a work period of 4 consecutive hours or during each half day are provided for in the laws of Colorado, Oregon, and Utah. These are applicable usually to retail trade employees. In California if nature of work requires continuous standing, the industrial welfare commission may require that 10-minute rest periods be given after 2 or 2½ hours of work.

5. - NIGHT WORK

Twenty-two States have some requirement regarding employment of women at night. The laws of 2 of these States - Maryland, and New Hampshire - have no prohibitive period though they do limit the hours a woman may work at night to 8. (The daily maximum in these States is 10 and 10½ hours, respectively.) New Mexico increases its weekly limit for night work in telephone and telegraph offices to 54 hours (for day work, hours in this industry may not exceed 48).

In 4 States - Arizona, Kentucky Rhode Island, and Virginia - the only limitation on night work aplies to persons (in Virginia, girls) under 21 in messenger service.

The following 15 States prohibit night work for women in certain industries or occupations. In Ohio and in Washington only one very small group of woman workers is covered, ticket sellers in the former, elevator operators in the latter.

California
Connecticut
Delaware
Indiana
Kansas
Massachusetts
Nebraska
New Jersey
New York
North Dakota
Ohio
Pennsylvania
South Carolina
Washington
Wisconsin

6. - SEATING LAWS

Forty-six States have seating laws - all but 1 of them applying exclusively to women. Florida's law applies to both males and females.

Illinois and Mississippi have no seating laws.

V.--PROHIBITORY LAWS

(NOTE - Asterisk preceding entry indicates that application of law is to persons under 21 years of age only.)

Alabama: Labor in or about a coal mine.

Arizona: Work in or about a mine, quarry, or coal breaker.

Arkansas: Not to be permitted to enter any mine to work therein.

California: May not mix alcoholic beverages containing distilled spirits on premises used for the sale of alcoholic beverages, unless she is the licensee or wife of any such licensee.

* Employment of person under 21 on portion of premises used for sale and service of alcoholic beverages for consumption on premises.

Colorado: Employment in or about a coal mine or coke oven except in a clerical capacity.

Connecticut: Employment in any tavern, unless employee is the wife or daughter of proprietor.

Delaware: * Employment of person under 21 in room where intoxicating liquors are sold or dispensed, unless the establishment sells for medical or scientific purposes.

Florida: * Employment of person under 21 in pool room, billiard room, or place where intoxicating liquors are manufactured or sold. Exemptions: Professional entertainers; drug or grocery stores licensed to sell beer and wine for consumption on premises; hotel workers if work is apart from place where alcoholic beverages are sold.

Illinois: Manual labor in or about a mine.

Municipal authorities are empowered to prohibit by ordinance employment of women (other than a licensee or wife of licensee) as dispensers in retail liquor establishments.

Indiana: Employment within a coal mine.

* Employment of person under 21 in any public pool or billiard room.

Kentucky: Employment by retail liquor licensee for duties other than as waitress, cashier, or usher.

Louisiana: Employment in any concert hall or saloon where spirituous liquors, wines, or malt are sold in the dispensing or distributing of such liquors.

7. • PROHIBITORY ~~AGE~~ LAWS

Alabama- Labor in or about coal mine.

Arizona- Work in or about mine, quarry, or coal breaker.

Arkansas- Not to be permitted to enter any mine to work therein.

California- May not sell alcoholic beverages containing distilled spirits on premises used for the sale of alcoholic beverages, unless she is the licensee or wife of any such licensee.

• Employment of person under 21 on portion of premises used for sale and service of alcoholic beverages for consumption on premises.

Colorado- Employment in or about a coal mine or coke oven except in a clerical capacity.

Connecticut- Employment in any tavern, unless employee is the wife or daughter of proprietor.

Delaware- • Employment of person under 21 in room where intoxicating liquors are sold or dispensed, unless the establishment sells for medical or scientific purposes.

Florida- • Employment of person under 21 in pool room, billiard room, or place where intoxicating liquors are manufactured or sold.
Exceptions: Professional entertainers; drug or grocery stores licensed to sell beer and wine for consumption on premises; hotel waiters if work is apart from place where alcoholic beverages are sold.

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Indiana- Employment within a coal mine.
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Kentucky- Employment by retail liquor licensee for duties other than as waiters, cashier, or usher.

Louisiana- Employment in any concert hall or saloon where spirituous liquors, wines, or malt are sold in the dispensing or distributing of such liquors.

NOTE - Asterisk preceding entry indicates that application of law is to persons under 21 years of age only.

7. - PROHIBITORY LAWS Cont'd.

Maryland: Employment, other than office work, in connection with any mine.

* Employment of person under 21 in or in connection with any place where intoxicating liquors are sold.

Massachusetts: * Employment of person under 21 in, about, or in connection with a saloon or bar room where alcoholic liquors are sold.

Minnesota: * Employment of girl under 21 as messenger for telegraph or messenger company.

Missouri: Employment within any mine.

New Mexico: * Employment of girl under 21 as messenger for telegraph, telephone, or messenger company. Exemption permit may be granted during war emergency.

New York: Employment in or in connection with a mine or quarry.

* Employment of females under 21 as conductors or guards on any type of railroad.

* Employment of females under 21 as messenger for telegraph or messenger company.

Ohio: Employment as bellboy, crossing watchman, express driver, taxi driver,* jitney driver, meter reader (gas or electric), welder, or section hand, or in the following occupations or places:

Baggage handling.
Bar room and saloons or public drinking places which cater to male customers only and in which substitutes for intoxicating liquors are sold.
Blast furnaces; mines; quarries; or smelters; (Except in offices.)
Bowling alleys.
Delivery service.
Freight handling.
Operating freight or baggage elevators.
Pool rooms.
Shoe-shining parlors.

* Employment of girls under 21 in the personal deliver of messages.

An Act passed in 1943 effective during the war emergency limits the occupations in which women may not work during the emergency to the following:

Bar rooms and saloons or public drinking places which cater to male customers only.
Bellboy.
Metal molder.
Mines; quarries. (Except in offices.)
Pool rooms.

Oklahoma: Employment underground in the operation of a mine, or in any quarry. Office work exempted if on top of the ground.

* The prohibition of waitress driving was declared unconstitutional by a county court of Ohio.

7. - PROHIBITORY LAWS Cont'd.

Pennsylvania:	Handling or testing meters (water, gas, electric). Messenger for railroads in calling train crews. Crane operator. Welding and cutting. On railroad trucks and at trucking. Maintaining fires in hand-fired boiler furnaces. During present war emergency dispensations may be granted by department of labor for any of these occupations. Employment in or about a mine. (Except in office or clerical work.)
South Carolina:	* Employment of person under 21 in a retail, wholesale, or manufacturing liquor business.
Utah:	Employment in a mine or smelter. During present war emergency women may be employed at other than underground work in mines and in smelters.
Virginia:	Employment in or around a mine or quarry.
Washington:	Employment in or about a mine. (Except in clerical or messenger duty about the surface workings.) Employment as bellhops.
Wisconsin:	Employment in or about a mine or quarry. Employment in place established by court order as a disorderly house or ~~employed~~ to work for any person convicted as keeper of a disorderly house. * Employment of girl under 21 as bellhop in hotel. * Employment of girl under 21 as caddy on golf course.
Wyoming:	Employment in or about a coal or iron mine or in any other dangerous place. (Except in office or clerical work.)

8.-REGULATORY LAWS

Nine States have some regulation regarding the lifting or carrying of heavy weights by women. These States are:

California	New York
Massachusetts	Ohio
Michigan	Oregon
Minnesota	Utah
Washington	

9.-EQUAL-PAY LAWS

Five States have enacted statutes which prohibit discrimination in rate of pay because of sex. Two of these laws - Illinois and Michigan - apply to manufacture only.

Illinois	Montana
Michigan	New York
Washington	

10.-MINIMUM-WAGE LAWS

Twenty-six States and the District of Columbia have minimum-wage laws on their statute books. These laws are broad in their coverage of industries, most of them being all-inclusive with a few listed exemptions, usually domestic service and agriculture. The Maine law is the only one of limited scope, it applies to one industry only - fish packing. Most of these laws apply to women and minors, the ~~exemptions~~ being noted in the following list of States:

Arizona
Arkansas (Women and girls)
California
Colorado
Connecticut (All persons)
District of Columbia
Illinois
Kansas
Kentucky
Louisiana (Women and girls)
Maine
Massachusetts
Minnesota ~~(Women and girls)~~
Nevada (Women and girls)
New Hampshire
New Jersey
New York (All persons)
North Dakota
Ohio
Oklahoma (Women)
Oregon
Pennsylvania
Rhode Island
South Dakota (Women and girls)
Utah
Washington
Wisconsin

2. - INDUSTRIAL HOMEWORK LAWS

Twenty States and the District of Columbia have industrial home-work laws or regulations. In all but 3 - Colorado, Oregon, and Utah - and the District of Columbia the law applies to "persons"; in these 4 jurisdictions the law applies to women and minors only. The States are:

California	Michigan	Texas
Colorado	Missouri	Utah
Connecticut	New Jersey	West Virginia
District of Columbia	New York	Wisconsin
Illinois	Ohio	
Indiana	Oregon	
Maryland	Pennsylvania	
Massachusetts	Rhode Island	
	Tennessee	

3. - EMPLOYMENT BEFORE AND AFTER CHILDBIRTH

Six States have laws prohibiting the employment of women immediately before and after childbirth. These States and the periods during which women may not be required to work are:

Connecticut:	4 weeks before and 4 weeks after
Massachusetts:	2 weeks before and 4 weeks after
Missouri:	3 weeks before and 3 weeks after
New York:	4 weeks after
Vermont:	2 weeks before and 4 weeks after
Washington:	4 months before and 6 weeks after
~~Virginia (Norfolk): 30 days before and 30 days after~~	
~~Puerto Rico: 4 weeks before and 4 weeks after~~	

Ed. files

STATE ~~HOUR~~ LABOR LAWS FOR WOMEN

1. — DAILY AND WEEKLY HOURS

1. Forty-three States ~~and the District of Columbia~~ have laws limiting the daily and weekly hours of women's employment, in one or more industries.

Five States ~~One without~~ do not have such laws - Alabama, Florida, Indiana, Iowa, and West Virginia.

23 and the D of C

About one-half of the States (~~22~~) have set 8 hours a day and/or 48 hours a week or less as the maximum time a woman may be employed in one or more industries. These States ~~are:~~ that include manufacturing (in the States) are preceded by an asterisk

Arizona (8-48)
California (8-48)
Colorado (8-—)
Connecticut (8-48)
Illinois (8-48)
Louisiana (8-48)
Massachusetts (9-48)
Montana (8-—)
Nevada (8-48)
New Hampshire (10-48)
New Mexico (8-48)
New York (8-48)
North Carolina (9-48)
Ohio (8-45)
Oregon (8-44)
Pennsylvania (8-44)
Rhode Island (9-48)
Utah (8-48)
Virginia (9-48)
Washington (8-—)
Wyoming (8-48)

DC (8-48)

North Dakota (8½-48)

~~Close to~~ About one-fourth of the States (11) have set a maximum 9-hour day for women, all but 2 of which ~~and a week~~ have a week of 49½, 50, or 54 hours. ~~Two have placed no limit on weekly hours.~~ (1 of the 2, has a 54 hr week provision)

Arkansas (9-54)
Idaho (9-54)
Kansas (~~9-49½~~) 8-48
Maine (9-54)
Michigan (9-54)
Missouri (9-54)
Nebraska (9-54)
Oklahoma (9-54)
Texas (9-54)
Vermont (9-50)
Wisconsin (9-50)

~~Eight~~ States have set a maximum day of 10 hours and a week of from 54 to 60 hours, ~~in one or more industries.~~ These States are:

Delaware (10-55)
* Georgia (10-60)
Kentucky (10-60)
Maryland (10-60)
Mississippi (10-60)
New Jersey (10-54)
* South Carolina (10-55)
South Dakota (10-54)

Tennessee has a 10½-hour day and a 57-hour week.
Minnesota has a 54-hour week (no daily maximum).

Note - Asterisk in front of a State indicates that law is for both men and women.

MAXIMUM HOURS FOR MANUFACTURING

		Hours of work
	9.45	
	9.49½ − 6	
	10-48	
	9.47 (five & under)	6
	11-55 (five & under)	—
	9½-45 − 6	
	9-45	
*	10-55 textile	*6
	5 (cans)	
	5	6 (fish)
	9-50	—
		*6

	9-45 − 6	
	9-54	
*	8	
	8	
	8-44	6

Nearly half of the states (22) have limited the number of days that a woman may work in succession, usually to 6 out of 7. These States are:

Arizona
Arkansas
★ California
Colorado
+ Connecticut
Delaware
+ Illinois
Kansas
Louisiana
+ Massachusetts
Nevada
★ New Hampshire
New Jersey
★ New York
North Carolina
North Dakota
Ohio
Oregon
Pennsylvania
★ South Carolina
Washington
+ Wisconsin

Well over half of the States (27) have provided that a period of time varying from 1/2 hour to 1 hour must be allowed during the workday for meals or rest. These States are:

Arkansas
California
Colorado
Delaware
+ Illinois
+ Indiana
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
★ Nebraska
Nevada
New Jersey
New Mexico
★ New York
North Carolina
North Dakota
Ohio
Oregon
Pennsylvania
Rhode Island
Utah
Washington
West Virginia
Wisconsin

3

Rest periods of 10 minutes after a number of work are required in 4 States - California, Colorado, Oregon, and Utah. These are applicable usually to retail trade employees. (In Kentucky, rest periods during the day may be allowed in lieu of the 1-hour meal period.)

- - NIGHT-WORK

Twenty-one States have some requirement regarding employment at night. In three States - Maryland and New Hampshire - limit the hours a woman may work at night to 10 and 10½ hours, respectively, as allowed by the day. New Mexico increases its weekly limit for night work in telephone and telegraph offices to 54 hours (for day work, hours in this industry may not exceed 48).

In 2 States - Arizona, Kentucky and Rhode Island - the only limitation on night work applies to persons under 21 in messenger service.

The remaining 15 States prohibit night work for women in certain industries or occupations. In Ohio and in Washington only one very small group is covered, ticket sellers in the former, elevator operators in the latter.

California
Connecticut
Delaware
Indiana
Kansas
Massachusetts
Nebraska
New Jersey
New York
North Dakota
Ohio
Pennsylvania
South Carolina
Washington
Wisconsin

5 - SEATING LAWS

Forty-six States have seating laws - all but 1 of them applying exclusively to women.

Florida's law applies to both males and females.

Illinois and Mississippi have no seating laws.

6 - INDUSTRIAL HOMEWORK LAWS

Twenty States have industrial home-work laws or regulations. These States are:

California
Colorado
Connecticut
Illinois
Indiana
Maryland
Massachusetts
Michigan
Missouri
New Jersey
New York
Ohio
Oregon
Pennsylvania
Rhode Island
Tennessee
Texas
Utah
West Virginia
Wisconsin

8.- EMPLOYMENT ~~PROTECTION~~ BEFORE AND AFTER CHILDBIRTH

Six States have laws prohibiting the employment of women immediately before and after childbirth. These are:

Connecticut (4 weeks before and 4 weeks after).
Massachusetts (2 weeks before and 4 weeks after).
Missouri (3 " " " 3 " ")
New York (" " 4 " ")
Vermont (2 weeks before and 4 weeks after).
Washington (4 months before and 6 weeks after)

Philippine Islands (30 days before and 30 days after).
Puerto Rico (4 weeks before and 4 weeks after).

DEPARTMENT OF LABOR

No. 484

6-Prohibitory & Regulatory Laws

c. ~~PROHIBITORY LAWS~~

Alabama - Labor in or about any coal mine.

Arizona - Work in or about any mine, quarry, or coal breaker.

Arkansas - ~~Women~~ not to be permitted to enter any mine to work therein.

California - May not mix alcoholic beverages containing distilled spirits on premises used for the sale of alcoholic beverages, unless she is the licensee or wife of such licensee.

Persons under 21 ~~may not be employed~~ on portion of premises used for sale and service of alcoholic beverages for consumption on premises.

Colorado - Employment in or about a coal mine or coke oven except in a clerical capacity.

Connecticut - Employment in any tavern, unless employee is the wife or daughter of proprietor.

Delaware - Employment of person under 21 in room where intoxicating liquors are sold or dispensed, unless the establishment sells for medical or scientific purposes.

Florida - Employment of person under 21 in pool room, billiard room, or place where intoxicating liquors are manufactured or sold. Exempts professional entertainers; drug or grocery stores licensed to sell beer and wine for consumption on premises; hotel workers if work is apart from place where alcoholic beverages are sold.

Illinois - No manual labor in or about any mine.

Municipal authorities empowered to prohibit by ordinance employment of women (other than a licensee or wife of licensee) as dispensers in retail liquor establishments.

Indiana - Employment within any coal mine.

Employment of person under 21 in any public pool room or billiard room.

~~Municipal authorities empowered to prohibit employment of women (other than licensees or wives of licensees) as dispensers in retail liquor establishments~~

Kentucky - Employment by any retail liquor licensee for any duties other than as waitress, cashier, or usher.

Louisiana - Employment in any concert hall or saloon where spirituous liquors are sold in the dispensing or distributing of such liquors.

May not be required to clean machinery while it is in motion.

+ Statute sometimes construed that application of law is to persons under 21 years of age only.

Maryland - Employment, other than office work, in connection with any mine.

Employment of persons under 21 in or in connection with any place where intoxicating liquors are sold.

Massachusetts - Employment of persons under 21 in, about, or in connection with any saloon or bar room where alcoholic liquors are sold.

Michigan - Employment in any retail liquor establishment as bar keeper, or to serve liquor, to furnish music, or for dancing.

Minnesota - No woman employed or about any moving machinery.

Missouri - Employment within any mine.

No woman shall be required to clean any part of the mill, gearing or machinery while it is in motion.

No woman may be required to work between the fixed and traversing parts, or the traversing parts, of any machine in motion by a mechanical power other than human.

New Jersey - Employment in the manufacture of nitro and amido compounds. Exemptions: office, works hospital, or welfare room or building.

Handling any dry substance or dry compound containing lead in any form in excess of 2 percent.

New Mexico - Employment of women under 21 as messengers for telegraph, telephone, or messenger company. Exemption permit may be granted during war emergency.

New York - Employment in or in connection with a mine or quarry.

Employment in operation or use of various abrasive polishing or buffing wheels on baser metals or iridium, except for wet grinding by women over 21, under official regulations.

Employment of females under 21 as conductors or guards on any type of railroad

Employment of females under 21 as messenger for telegraph or messenger co.

May not be employed or directed to clean machinery while it is in motion.

Ohio - Employment as bell hop, crossing watchman, express driver, meter reader (gas or electric), molder, or section hand.

Employment in the following occupations or places is also prohibited: 1/

Baggage handling.
Bar room and saloons or public drinking places which cater to male customers only and in which substitutes for intoxicating liquors are sold.
Blast furnaces; mines; quarries; or smelters. (Except in offices)
Bowling alleys.
Delivery service.
Freight handling.
Operating freight or baggage elevators.
Pool rooms.
Shoe shining parlors.

Operation or use of wheels or belts of emery or other specified material.

* Employment of girls under 21 in the personal delivery of messages.

1/ The prohibition of taxicab driving was declared unconstitutional by a county court in Ohio in 1928, (Jitney driving likewise omitted from the above list.)

* Act passed in 1943 effective during the war emergency limits the occupations in which women may not work during the emergency to the following:

Bar rooms and saloons or public drinking places which cater to male customers only.
Bell hop.
Metal molder
Mines; quarries. (Except in offices)
Pool rooms.

Laws relating to two other occupations in Ohio (see two last entries in list above) are still in operation.

Oklahoma - Employment underground in the operation of a mine, or in any quarry. Office work exempted if on top of the ground.

1/ Not permitted to ~~work~~ or handle cores where combined weights of ~~core~~, box, and sand exceeds 25 lbs.
Not permitted to handle cores with temperature of more than 110°F.

Ohio - Employment as bell hop, crossing watchman, express driver, meter reader (gas or electric), molder, or section hand.

Employment in the following occupations or places is also prohibited: 1/

Baggage handling.
Bar room and saloons or public drinking places which cater to male customers only and in which substitutes for intoxicating liquors are sold.
Blast furnaces; mines; quarries; or smelters. (Except in offices.)
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Delivery service.
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Laws relating to two other occupations in Ohio (see two last entries in list above) are still in operation.

Oklahoma - Employment underground in the operation of a mine, or in any quarry. Office work exempted if on top of the ground.

Pennsylvania - Reading or testing meters (water, gas, electric).
As messenger for railroads in calling train crews.
As crane operators.
At welding operation.
On railroad tracks and at trucking.
Maintaining fires in hand-fired boiler furnaces.
~~Handling any dry substance or dry compounds containing lead in excess of 2 percent.~~

During present war emergency dispensations may be granted by department of labor for any of the above.

Employment in or about any mine.
Taking down of blue beds after the process of lead corroding.
Process of manufacturing nitroglycerine in explosive plants.

Manufacture of nitro and amido compounds. (Except in office, hospital, laboratory or welfare room or building.)

South Carolina - Employment of person under 21 in a retail, wholesale, or manufacturing liquor business.

Utah - Employment in any mine or smelter.

During present war emergency women may be employed in other than underground work in mines and in smelters.

Virginia - Employment in or around any mine or quarry.

Washington - Employment in or about any mine, (except) clerical or messenger duty about the surface workings.

Employment as bell hops.

Wisconsin - Employment in place established by court order as a disorderly house or employment for any person convicted as keep of a disorderly house.

Wyoming - Employment in or about any coal or iron mine or in any other dangerous place, (except) office or clerical work.

-9-

8. - REGULATORY LEGISLATION

Nine States ~~California, Massachusetts, Michigan, Minnesota, New York, Ohio, Oregon, Rhode Island and Washington~~ have some regulation regarding the lifting or carrying of heavy weights by women. ~~Each of these nine except~~ is provided in Massachusetts, Minnesota, New York, Ohio, and Pennsylvania.

~~Cleaning of moving machinery, handling of dry compounds or of harmful substances, and work on certain kinds of moving structures are among the other occupations in which women's employment is regulated by State law.~~

Nine States are:

~~1/ Oregon has repealed its weight lifting order for the duration.~~

Calif.
Mass.
Mich.
Minn.
N.Y.
Ohio
Ore.
Utah
Wash.

6. - MINIMUM-WAGE LAWS

Twenty-six States and the District of Columbia have minimum-wage laws on their statute books. These laws are broad in their coverage of industries, most of them being all-inclusive with a few listed exemptions, usually domestic service and agriculture. The Maine law is the only one of limited scope, it applies to only one industry - fish packing.

Most of these laws apply to women and minors, the exemptions being noted in the following list of States:

Arizona	Louisiana (Women and girls)	Ohio
Arkansas (Women and girls)	Maine	Oklahoma
California	Massachusetts	Oregon
Colorado	Minnesota (Women and girls)	Pennsylvania
Connecticut (All persons)	Nevada	Rhode Island
District of Columbia	New Hampshire	South Dakota (Women and girls
Illinois	New Jersey	Utah
Kansas	New York (All persons)	Washington
Kentucky	North Dakota	Wisconsin

7. - EQUAL-PAY LAWS

Five States - ~~Illinois, Kansas, Montana, New York, and Washington~~ - have enacted statutes which prohibit discrimination in rate of pay because of sex. Two of these laws - Illinois and ~~[illegible]~~ - Michigan ~~[illegible]~~

applies to "manufacturing only."

Ill. Mont.
Mich. N.Y.
Wash

STATE LABOR LAWS FOR WOMEN
JAN. 1945

State Labor Laws for Women, Summaries
for Various States. Jan. 1945.

Checked copy for mimeographing for each sta

Dec 15, 1944 -

Labor, ... summaries (Mines)

Top sheets were used for copy in cutting
stencils - fusion stapling done for some
states (this directed from 1st copy or from
intermediary of corrected 1st copy, with
typing form indicated), in other cases
stenciling done from 1st copy. Additions
by mimeograph sometimes added
after stencil cut.

Cover page

Old Introduction Used until Dec 15 1944 as date

State Labor Laws for Women

Outline by States

January 1, 1945

U.S. Dept. of Labor
Women's Bureau
Washington

(over) - another page

Women's Bureau
U. S. Department of Labor
Washington

Dec. 15, 1944

~~January 1, 1945~~

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

Women's Bureau
U. S. Department of Labor
Washington

Dec. 15, 1944

~~January 1945~~

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

SUMMARY - BY STATES

ALASKA

Hours of work

Daily - No law.

Weekly - 60 hours.

Coverage - Female household or domestic service employees.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night work - No law.

Plant facilities

Seating - No law.

Lunch rooms - No law.

Dressing rooms - No law.

Toilets - Canneries, factories, or other establishments where labor is employed must provide for all employees a sufficient number of toilet accommodations. When both males and females are employed, separate accommodations for each sex must be supplied, plainly marked. Ratio ~~for females~~: 1 facility for every 25 ~~persons~~.

Weight lifting and other conditions of work - No laws.

Prohibited occupations - No laws.

Industrial Homework - No laws.

Maternity Leave - No laws.

Wartime provisions - No laws.

Minimum Wage

Alaska

Statute

Coverage

1. Employees - Women over 18 years of age

2. Industries or Occupations

ALABAMA

Hours of Work

Daily - No law.

Weekly - No law.

Day and Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Stores or shops employing women or girls as clerks or saleswomen must provide proper accommodations for sitting or resting, and permit use of these facilities by the employees when they are not actively engaged in their duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms.

Stores or shops employing females as clerks or saleswomen must provide separate water closets for them in the building or conveniently near.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No woman of any age may work or labor in or about a coal mine.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY BY STATES

ALABAMA

Hours of Work

Daily - no law.

Weekly - no law.

Meal and Rest Periods - no law.

Night Work - no law.

Plant Facilities

Seating - Stores or shops employing women or girls as clerks or saleswomen must provide proper accommodations for sitting or resting, and permit use of these facilities by the employees when they are not actively engaged in their duties.

Lunch Rooms - no law.

Dressing Rooms - no law.

Toilets - Stores or shops employing females must provide separate water closets for them in the building or conveniently near.

Weight-lifting and other conditions of work - no law.

Prohibited Occupations - no law.

Industrial Homework - no law.

Maternity leave - no law.

Wartime provisions - no law.

ARIZONA

Hours of Work

Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

(1) Coverage - (Females 18 and over). Any labor at which employed, except as noted below.

Exemptions - Telephone or telegraph offices or exchanges or railroad yard offices (employing no more than 3 females); nurses; domestic work.

Variations - Longer hours permitted for the harvesting or processing of perishable fruit or vegetables during the period necessary to prevent spoilage.

(2) Coverage - (Men and women). Laundries.

Variations - Daily overtime permitted when necessary: (1) To make one shorter work day in week, (2) to make up time lost on previous day of same week due to stoppage of machinery on which worker is dependent; (3) to make repairs to prevent interruption of ordinary running of machinery.

Day of Rest.

A 6-day week established for employees and employments covered by Daily and Weekly hours of work law (1).

Variations - Women working 6 hours a day or less may work 7 days a week.

Meal and Rest Periods - No law.

Night Work.

(Persons 18 and under 21). Employment prohibited as messengers for telegraph or messenger companies between 10 p.m. and 5 a.m. in an incorporated city.

Plant Facilities

Seating.

Suitable seats, conveniently accessible, must be provided in the ratio of 2 for every 3 females employed in mills, factories, workshops, mercantile establishments, tenement houses, manufactories, stores, business offices, telegraph or telephone offices, restaurants, bakeries, barber shops, apartment houses, bootblack stands or parlors, or in the distribution or transportation of merchandise or messages. Use of seats to be permitted when women are not actively employed.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work .

Females not to be employed in any capacity that compels constant standing.

Prohibited Occupations.

Females are not to be employed or suffered to work in or about any mine, quarry, or coal breaker.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

Authority.

Industrial commission issues order based on recommendations of wage board as to minimum rates for occupation.

Coverage.

(1) Employees - Women and minors.

(2) Industries or Occupations - Any, except domestic service and agriculture.

Orders.

Laundry and dry cleaning (Mandatory)- Effective June 15, 1939.
Retail trades (Mandatory, revised) - Effective April 19,1943.

SUMMARY - BY STATES

ARIZONA

Hours of work

Daily - 8 hours.

Weekly - 48 hours.

Coverage - Any labor at which females are employed, except as noted below.

Exemptions - Telephone or telegraph offices or exchanges; railroad yard offices (employing no more than 3 females); nurses; domestic work.

Variations - Longer hours permitted for the harvesting or processing of perishable fruit or vegetables during the period necessary to prevent spoilage.

Laundries are permitted daily overtime when necessary: (1) To make one shorter work day in week, (2) to make up time lost on previous day of same week due to stoppage of machinery on which worker is dependent; (3) to make repairs to prevent interruption of ordinary running of machinery.

Day of Rest - One rest day a week to be provided by every employer covered by daily and weekly Hours law for all females in his employ.

Variations - Women working 6 hours a day or less may work 7 days a week.

Meal and Rest Periods - No laws.

Night work - Prohibited as to women messengers (between 18 and 21) for telephone or telegraph companies between 10 P. M. and 5 A. M.

Plant facilities

Seating - Suitable seats, conveniently accessible, must be provided in the ratio of 2 for every 3 females employed in mills, factories,

workshops, mercantile establishments, tenement houses, manufactories ~~or workshops~~, stores, business offices, telegraph or telephone offices, restaurants, bakeries, barber shops, apartment houses, bootblack stands or parlors, or in the distribution or transportation of merchandise or messages. Use of seats to be permitted when women are not actively employed.

Lunchrooms - No law.

Dressing and Rest Rooms - No law.

Toilets - No law.

Weight-lifting and other conditions of work - ~~No law.~~

Prohibited Occupations - Females are not to be employed or suffered to work in or about any mine, quarry, or coal breaker. Females not to be employed in any capacity that compels constant standing.

Industrial Homework - No laws.

Maternity leave - No laws.

Wartime provisions - None

6.

Museum

Requires -

Industrial & Industrial commission
would order based on
rates minimum wage boards.
as to minimum rates for occupations

Courses -

1. Compulsory - women and minors

2. Industrial Occupations -
[illegible] and minors
in [illegible] women,
except domestic service and
agriculture.

Orders -

Laundries and [illegible] Minister of Labor June 1, 1939.
Public Health Ministry, revised
- Effective Oct. 19, 1943.

SUMMARY - BY STATES

ALABAMA

Hours of work:

Daily - 8 hours

Weekly - 48 hours

Coverage - Any employer of females

Exemptions - Telephone or telegraph offices or exchanges, railroad yard offices (if not more than 5 female employees) nurses, Harvesting or processing of perishable fruit or vegetables during period necessary to prevent spoilage.

Day of rest - One full day a week to be provided by every employer for all females in his employ.

Night work -

Meal or rest period - No laws.

Prohibited occupations:

Females not to be employed or suffered to work in or about any mine, quarry or coal breaker, in any capacity compels constant standing.

Plant facilities:

Lunchrooms - No laws.

Seats - Must be provided by every employer of female in any mill, factory, workshop, mercantile establishment, tenement house, manufactory or workshop, store, business

office, telegraph office, restaurant, bakery, barber shop, apartment house, bootblack stand or parlor, or in the distribution or transportation of merchandise or messages.

D. Toilets ~~- Only general provisions.~~

Home-work laws - None.

Maternity laws - None.

Wartime exemptions - None.

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

ARKANSAS

Hours of Work

Daily - 9 hours. (See Variations Below.)
Weekly - No law.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishments; laundries, express or transportation companies, hotels, restaurants, eating places, banks, building and loan associations, insurance companies, finance or credit businesses, or work in any capacity other than occupations expressly exempted by law.

Exemptions - Domestic, agricultural, or horticultural employment, cotton factories, gathering of fruits or farm products; switchboard operators in public telephone exchanges of less than 500 stations.

Variations - Overtime above 8-hour day unlimited, if paid for at not less than 1 1/2 times the regular rate. If the overtime is of permanent nature in excess of 1 hour daily, such employment must be under permit from the commissioner of labor. By special permit, after application and hearing, the commissioner of labor may waive the hour-law provisions as to a woman executive or manager earning a salary of at least $35 weekly.

See also Wartime Provisions.

Day of Rest.

A 6-day week established for employees and employments covered by the "Hours of Work" law.

Variations - Work on the 7th day of the week must be under official permit. Time-and-a-half pay required for each hour worked on the 7th day. No permit granted for more than 90 days.

See also Wartime Provisions.

Meal and Rest Periods.

3/4 hour is minimum for lunch. After a 6-hour employment period, worker must be given interval of 1/2 hour.

Coverage - (Females). Employers of 3 or more females in the employments covered by the "Hours of Work" law.

Variations - If employed continuously for 6 1/2 hours and day's employment ends not later than 1:30 p.m., lunch period may be omitted.

See also Wartime Provisions and Lunch Rooms under Plant Facilities.

Night Work - No law.

Plant Facilities

Seating.
Every establishment employing women must provide conveniently located seats sufficient to accommodate comfortably the number employed. Women must be allowed to occupy seats when the active discharge of duties does not require standing.

Lunch Rooms.
In every establishment employing 6 or more persons, suitable room for women employees required, separate and apart from workrooms and toilet rooms; of if not practicable to provide lunch room, women shall have not less than 1 hour for mealtime and be permitted to leave the establishment for the period.

Dressing and Rest Rooms - No law.

Toilet Rooms.
Separate toilet and washrooms for each sex required in establishments employing 6 or more persons.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female of any age permitted to work in any mine.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

For duration of present war and 1 year thereafter, commissioner of labor may modify or suspend certain requirements of the law on application of either individual plant or whole industry. Before issuing order permitting suspension or modification, commissioner must be satisfied that a real necessity exists to attain better efficiency and greater production for the war effort. He may prescribe reasonable regulations pertaining to conditions of work and payment of overtime.

Arkansas

Jan. 1, 1945

Minimum Wage

Authority.

Statute sets minimum wage, but industrial welfare commission may raise or lower minimum in any occupation, trade or industry after investigation and public hearing.

Coverage.

(1) Employees - Females.

(2) Industries or Occupations - Manufacturing, mechanical, or mercantile establishment, laundry, express or transportation company, hotel, restaurant, eating place, bank, building and loan association, insurance company, finance or credit business; company supplying electricity or water; work in elevators.

Exceptions - Cotton factories, gathering of fruits or farm products, railroad companies under Federal hour laws.

Orders.

None.

SUMMARY - BY STATES

ARKANSAS

Hours of work

Daily - 8 hours.

Weekly - No law.

Coverage - All employers of females (16 and over) except those expressly exempted by law.

Exemptions - Domestic, agricultural, or horticultural employment, cotton factories, gathering of fruits or farm products; switchboard operators in public telephone exchanges of less than 500 stations.

Variations - Overtime above 8-hour day unlimited, if paid for at not less than 1 1/2 times the regular rate. If the overtime is of permanent nature, any excess employment above 1 hour daily must be under permit from the Commissioner of Labor. By special permit, after application and hearing, the Commissioner of Labor may waive the hour law provisions as to a woman executive or manager earning a salary of at least $35 weekly.

See also Wartime Provisions.

Day of Rest - A 6-day week provided for female employment in the employments covered by the Hours of work law, above.

Variations - Work on the 7th day of the week must be under official permit, granted on a showing of imperative need by an industry handling perishable products, or where necessity requires the action, in the Commissioner's judgment. Time and a half pay

required for each hour worked on the 7th day.

No permit granted for more than 90 days.

See also Wartime Provisions.

Meal and Rest Periods - 3/4 hour minimum for lunch. After a 6-hour employment period, worker must be given interval of 1/2 hour. If employed continuously for 6 1/2 hours and day's employment ends not later than 1:30 p. m. and lunch period may be omitted.

Coverage - Employers of 3 or more females in the employments covered in Hours of Work section above.

Variations - See Wartime Provisions ~~sections also,~~ and ~~also~~ "Lunchrooms" under Plant Facilities.

Night Work - No law.

Plant Facilities:

Seating - Every establishment employing women must provide conveniently located seats sufficient to accommodate comfortably the number employed. Women must be allowed to occupy seats when the active discharge of duties does not require standing.

Lunch rooms - Suitable room for women employees required, separate and apart from work rooms and toilet rooms; or if not practicable to provide lunch room, women shall have not less than 1 hour for meal time and be permitted to leave the establishment for the period.

Coverage - Factories, manufacturing establishments, workshops, or other places employing 6 or more women.

Dressing and rest rooms - No law.

Toilets - Separate toilet and washrooms for each sex required.

Coverage - See Lunchrooms above.

Weight-lifting and other conditions of work - No law.

Prohibited Occupations - No female of any age permitted to work in any mine.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - For duration of present war and 1 year thereafter, Commissioner of Labor may modify or suspend requirements on application of either individual plant or whole industry. Before issuing order permitting suspension or modification, Commissioner must be satisfied that a real necessity exists to attain better efficiency and greater production for the war effort.

~~mw~~

Chapter 2

Ia Authority ~~Statute~~ to determine minimum wage, ~~but~~ industrial welfare commission may raise or lower minimum in any occupation, trade or industry after investigation and publication.

Coverage -

a 1. Employees - females

a 2. Industries or Occupations -

Manufacturing, mechanical or mercantile establishment, laundry, any ~~industry~~ transportation company, hotel, restaurant, telephone, telegraph, building and loan association, insurance company, finance or credit business; company supplying electricity or water; work in elevators.

(over)

Excavations - Carrières,

[illegible] - 48 STATES

[illegible]

Hours of Work -

~~Basic Standards~~ -

8-hour day.
6-day week.

Overtime prohibited, if paid for at not less than 1½ times the regular rate. If overtime of permanent nature, any excess above 1 hour daily requires a written permit from the Commissioner of Labor.

Coverage - all employers of females except those expressly exempted by law (see Chart).

Exemptions - employees ~~covered~~ by the Federal Fair Labor Standards Act of 1938, employees in cotton factories, or in the gathering of fruits or farm products, domestic, agricultural, or horticultural employees.

Day of rest - Provided by law.

~~Exceptions~~ - A 7-day week may be authorized by permit from the Commissioner of Labor on showing of imperative need by an industry handling perishable products, or where, in the commissioner's judgment, exigency requires the action. ~~Overtime rate~~ rate required for each hour worked on the 7th day. No permit for more than 90 days.

Meal ~~&~~ rest periods -

½-hour minimum for lunch. Rest interval of 30 minutes after each 6-hour period of continuous employment, except on "short day" ending after 6½ hours' continuous work.

Coverage - Employer of 5 or more females.

Night work - No law for women over 18.

* Variation - Commissioner may grant exemption on certain products handled by him

Weight Lifting - No law.

Prohibited Occupations -

Mining - No female of any age to work in any mine.

Plant Facilities -

Lunchrooms - Employers of 6 or more men and women to provide a suitable lunchroom, separate from work and toilet rooms.

[redacted] - If impracticable for an establishment to provide lunchroom, women shall have not less than 1 hour for meal time and be permitted to leave the establishment for the period.

Seats -

Every establishment employing women must provide conveniently located seats sufficient for the number employed. Women must be allowed to occupy seats when the active discharge of duties does not require standing.

Toilets - In every place where 6 or more men and women are employed, separate toilet and washrooms for each sex must be provided.

Homework Laws - None.

Maternity Laws - None.

Wartime Provisions -

During World War II and for the 12 months following, the Commissioner of Labor has power to modify or suspend requirements of the law relating to hours of women's employment, to attain "better efficiency and greater production," if necessary to prosecution of the war. Application by a single establishment or by an industry as a whole, leads to investigation of facts by the Commissioner. If need for suspension or modification of the law is proved, the Commissioner's order is issued directing the change. The order must specify the particular change allowed the particular plant or industry covered, and the period of exemption granted. Reasonable work conditions and overtime payment rates may be specified in the order as requisites to the exemption.

SUMMARY - BY STATES

ALABAMA

Hours of work:

Daily) No laws.
Weekly)

Day of rest - No law.

Night work - No law.

Meal and rest periods - No law.

Prohibited occupations:

Mining - No woman of any age to be employed to work or labor in or about any coal mine.

Plant facilities:

Lunchrooms - No law.

Seats - Any person who owns or controls a store or shop in which any female is employed as clerk or saleswoman must provide proper accommodations for her to sit or rest when not actively engaged in her work, and must permit the intended use of the accommodation.

Toilets - Such a person must provide separate water closets for female employees.

Home-work laws - None.

Maternity laws - None.

Wartime exemptions - None.

CALIFORNIA

Hours of Work

Daily - Maximum, 8 hours in any one 24-hour day.
Weekly - Maximum, 48 hours.

Coverage - (Women 18 and over). Manufacturing, mechanical or mercantile establishment or industry; laundry, cleaning, dyeing, cleaning and dyeing, hotel, public lodging house, apartment house, hospital, beauty shop, barber shop, place of amusement, restaurant, cafeteria, telegraph or telephone establishment or office, elevator operation in office buildings, any express or transportation company.

Exemptions - Graduate nurses in hospitals.

Variations - Not applicable during harvesting, curing, canning or drying of any variety of perishable fruit, fish, or vegetable during period necessary to save product from spoiling.

72-hour maximum work week, or a 7-day week, permitted in canning and preserving industries to prevent deterioration or spoilage of the product handled. Conditioned on employer's granting a 24-hour rest-period after 72 hours' work and payment of overtime rates specified by industrial welfare commission order.

Similar overtime arrangement granted for employees handling farm products after harvest or engaged in preparation of eggs, poultry, and dairy products.

Employees in professional, technical, clerical and similar occupations, not covered by the Eight-Hour Law for Women, permitted to work more than 8 hours a day or 48 hours a week in emergencies if overtime rate specified in the order is paid.

A 16-hour maximum workday (including meal periods), also 7-day week, allowed for motion picture extra employees who act, sing, dance, or otherwise perform at a wage of not more than $15 a day or $65 a week, if overtime rates, as specified by industrial welfare commission order, are paid.

Women employed at not more than $40 a week in motion pictures, who do not act, sing, dance, or otherwise perform, may work overtime in emergencies, if paid the overtime rates specified in the official order. See also Wartime Provisions.

Day of Rest.
(Men and women).
A 6-day week established in any occupation of labor.

Exemptions - Work performed in care of animals, crops, or lands; protection of life or property; common carrier engaged in or connected with movement of trains; employees working under collective bargaining agreements.

Variations- Work on the 7th day allowed in emergencies and in employment which does not exceed 30 hours a week or 6 hours a day. Commissioner has authority to exempt any employer or employee if in his judgment hardship will result. If nature of work requires that employee work 7 or more consecutive days, days of rest may be accumulated and equivalent time off allowed during calendar month. See also Wartime Provisions.

Meal and Rest Periods.

(1) (Women and minors). At least 1/2 hour to be allowed for meals in any occupation, trade, or industry. Also, the industrial welfare commission may require a 10-minute relief period every 2 hours if the nature of the work requires continuous standing.

Variations - The commission may grant exemption if it is shown that enforcement of the rule works undue hardship on the employer and does not increase comfort, health, or safety of employees. See also Wartime Provisions.

(2) (Women and minors). A 10-minute rest period (with pay) must be given after 2 1/2 consecutive hours of employment on jobs that require constant standing in the following industries: Handling farm products after harvest; canning and preserving; public housekeeping; laundry, dry cleaning and dyeing; mercantile business; also for professional, technical, clerical, and similar occupations, and for telephone, telegraphy and teletype operators unless in establishments under Federal or State regulation having 1 operator on duty at a time.

Variations - Rest period not required for employees in Amusement and recreation establishments if the day's work is completed in 3 hours. See also Wartime Provisions.

Night Work.

(1) (Women and minors). Driving taxicabs or automobiles for hire between 8 p.m. and 6 a.m. prohibited.

(2) (Women 18 and over). Employment between 12 midnight and 6 a.m. allowed in manufacturing industries only by permit from industrial commission if night work deemed "essential to the operation of an industry." Overtime rate of not less than 60 cents an hour must be paid.

Exemptions - Canning and preserving occupations; motion pictures; clerical, professional, and technical services within an industry; handling farm products after harvest.

(3) (Women 18 and over). Employment between 10 p.m. and 6 a.m. allowed in personal service occupations only by permit from the industrial commission when the work is deemed essential to the operation of the establishment. Overtime rates of at least 60 cents an hour must be paid.

(4) (Women 18 and over). Employment between 11 p.m. and 6 a.m. permitted in canning and preserving industries only by permit from the Industrial Welfare Commission. See also Wartime Provisions.

~~Variations - See Wartime Provisions.~~

Plant Facilities

Seating.

Suitable seats (at least 1 for every 2 women employed) required for female employees in any establishment, also for extras in the motion picture industry on sets or locations. Use of seats must be permitted when employees are not engaged in the active duties of their employment.

Exemption granted only on satisfactory evidence that enforcement of the rule causes undue hardship to the employer and does not increase the comfort, health, or safety of employees.

In any occupation, trade or industry, including canning and preserving and handling farm products after harvest, employers must provide 1 adjustable seat for each female worker at the work tables or machines, if the nature of the work permits.

Lunch Rooms.

Sanitary conditions regulated by the industrial welfare commission, where lunch rooms are provided.

Dressing and Rest Rooms.

A suitable dressing room where women employees may change their clothing in privacy and comfort, when the nature of the employment requires special work garments, must be provided by the employer in any occupation, trade, or industry, unless exemption granted on proof that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, or safety of employees. Specifically covered industries are: Public housekeeping and laundry, dry cleaning and dyeing, transportation, amusement and recreation, and motion pictures (for extra employees).

Rest rooms are required for women employees in any occupation, trade, or industry, unless exemption granted on proof that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, or safety of employees. Number of couches, beds, or cots graduated according to number of employees. Room to be open to women at all times.

Toilet Rooms.

A sufficient number of water closets (at least 1 toilet for every 20 female employees, or fraction of that number, for first 200 women, and 1 toilet for every 30 women thereafter) must be provided for employees in any occupation, trade, or industry unless investigation shows that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, and safety of employees. When 5 or more men and women are employed, separate toilet rooms must be provided for women and plainly marked. Location of room must be accessible. At least 1 toilet is required for every 20 women extras employed on location by motion picture industry.

Other Regulations

Weight Lifting and Other Conditions of Work.

No female employee permitted to lift any receptacle which with contents weighs 50 pounds or over; nor to carry any receptacle weighing, with contents, 10 pounds or over, up or down a stairway of more than 5 feet in height from its base.

When female employees are to move receptacles weighing, with contents, 50 pounds or over, pulleys, casters, or other equipment must be provided to facilitate movement of the load.

However, by order of the Industrial Welfare Commission, the maximum load is set at 25 pounds, which in effect supersedes the higher statutory maximum of 50 pounds. Commission may give exemption in writing if it is satisfied after investigation that enforcement of rule works undue hardship on employer and does not materially increase comfort, health, or safety of employees. See also Wartime Provisions.

Prohibited Occupations.

No minors (that is, person under 21) may be employed or used on that portion of the premises used for the sale and service of alcoholic beverages for consumption on the premises.

No female may be employed in mixing alcoholic beverages containing distilled spirits on premises used for the sale of alcoholic beverages for consumption on the premises, unless she is the on-sale licensee or the wife of any such licensee on the premises for which the husband holds license.

Industrial Home Work.

The law regulates the manufacture in a home of materials or articles for an employer unless for the use of himself or a member of his family, and covers every employer in the manufacturing industry wherever conditions make the law applicable.

Home work is prohibited on articles of food or drink, articles for use in connection with the serving of food or drink, or articles of wearing

apparel for the use of children 12 years of age or under; toys and dolls; tobacco; drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and articles of like character.

A permit must be obtained annually by employer; fee is $5.00. Home worker must have a certificate, issued free; renewable annually; valid only for work performed by the applicant himself in his own home.

Home worker must be at least 16 years of age, and free from any communicable disease.

Employer is required to keep records of home-workers' names, addresses, earnings, and articles produced; also record of all persons supplying him with work or materials and of agents to whom he furnished work. He must label home-work materials with his name and address in legible English.

The industrial welfare division is authorized to issue orders prohibiting home work in any industry when it finds the employment injurious to the health and welfare of the home workers, or detrimental to labor standards established by law for factory workers in the industry.

By virtue of this authority, the division has prohibited home work on garments, including hand or machine processes, also preparing, altering, repairing, or finishing, but excluding hand knitting. Special permits to do home work in these industries may be obtained by persons unable to do factory work because of advanced age, physical or mental disability, or essential care of an invalid in the home.

Maternity Leave - No law.

Wartime Provisions

Until the cessation of hostilities in present war or the 31st day after adjournment of the 1945 legislature, whichever occurs first, the Governor may issue a war production permit permitting employment of females 'at or for such hours, and at such type of work, and under such conditions, as may be helpful in increasing production and furthering the war effort without unreasonably increasing the risk or impairing the health or safety of said female employees.' Employer must apply for permit within 24 hours after he employs females for a spread of hours, at types of work, or under conditions, that are illegal without permit.

Governor has authority to issue or deny permit and may or may not follow the recommendation of the State department responsible for enforcement of the particular law involved. Upon proper cause shown, Governor may at any time revoke, modify, or suspend existing permit.

For the duration of the war emergency, an employer actually engaged in war production may claim exemption from the laws prohibiting night work. If the Commission is satisfied that employment of women during these hours is 'reasonably necessary to increase war production', a permit may be issued.

Feb. 15, 1944

Minimum Wage

Authority.

Industrial welfare commission issues mandatory order based on recommendations of wage board as to minimum rates for industry.

Coverage.

(1) **Employees** - Women and minors.

(2) **Industries or Occupations** - Any..

Orders. Effective date

Manufacturing	- Effective	June 29, 1942
Personal Service (beauty culture)	"	Nov. 23, 1942
Canning and Preserving	"	Feb. 8, 1943
Laundry, dry cleaning and dyeing	"	June 21, 1943
Mercantile	"	June 21, 1943
Professional, technical, clerical, etc.	"	June 28, 1943
Public housekeeping	"	June 28, 1943
Handling farm products	"	Aug. 27, 1943
Transportation	"	Aug. 27, 1943
Amusement and Recreation	"	Aug. 27, 1943

Flat Rate

No Law.

SUMMARY - BY STATES

CALIFORNIA

Hours of Work

Daily - 8 hours in any one 24-hour day.

Weekly - 48 hours.

Coverage - (Women 18 and over) Manufacturing, mechanical or mercantile establishment or industry, laundry, cleaning, dyeing, cleaning and dyeing, hotel, public lodging house, apartment house, hospital, beauty shop, barber shop, place of amusement, restaurant, cafeteria, telegraph or telephone establishment or office, elevator operation in office buildings, any express or transportation company.

Exemptions - Graduate nurses in hospitals.

Variations - Harvesting, curing, canning or drying of any variety of perishable fruit, fish, or vegetable during period necessary to save product from spoiling.

72-hour maximum work week, (or a 7-day week, permitted in canning and preserving industries to prevent deterioration or spoilage of the product handled. Conditioned on employer's granting a 24-hour rest-period thereafter, and payment of overtime rates specified by Industrial Welfare Commission Order.

Similar overtime arrangement granted for employees handling farm products after harvest, ~~also~~ those engaged in preparation of eggs, poultry, and

dairy products.

Employees in professional, technical, clerical and similar occupations, not covered by the Eight-Hour Law for Women, permitted to work ~~overtime in~~ emergencies.

A 16-hour maximum work-day (including meal periods), also 7-day week, allowed for motion picture extra employees who act, sing, dance, or otherwise perform at a wage of not more than $15 a day or $65 a week, if overtime rates are paid as specified by Industrial Welfare Commission Order.

Women ~~16 and over~~ employed at not more than $40 a week in motion pictures, who do not act, sing, dance, or otherwise perform, may work overtime in emergencies, if paid the overtime rates specified in the official order.

Day of Rest

A 6-day week established in any occupation of labor (men and women).

Exemptions - Work performed in care of animals, crops, or lands; protection of life or property; common carrier engaged in or connected with movement of trains; employees working under collective bargaining agreements; employment which does not exceed 30 hours a week or 6 hours a day.

Variations - Work on the 7th day allowed in emergencies. Commissioner has authority to exempt any employer or employee

if in his judgment hardship will result.

Meal and Rest Periods:-

At least 1/2 hour to be allowed for meals in any manufacturing, trade, or industry. Also, the Industrial Welfare Commission may require a 10-minute relief period every 2 hours if the nature of the work requires continuous standing.

Variations - The Commission may grant exemption if it is shown that enforcement of the rule works undue hardship on the employer and does not increase comfort, health, or safety of employees.

A 10-minute rest period (with pay) must be given after 3 1/2 consecutive hours of employment on jobs that require substantial standing in the following industries: Handling farm products after harvest; canning and preserving, Public housekeeping; laundry, dry cleaning and dyeing; mercantile business; also for professional, technical, clerical, and similar occupations, and for telephone, telegraph, and teletype operators unless in establishments under Federal or State regulation having 1 operator on duty at a time.

Variations - Rest period not required for employees in amusement and recreation establishments if the days work is completed in 3 hours. See also "Maritime Provisions."

Night work - Driving taxicabs or automobiles for hire prohibited for women or minors.

2. Employment in manufacturing industries between 12 midnight and 6 a.m. only by permit from Industrial Commission if night work deemed "essential to the operation of an industry." Overtime rate of not less than 50 cents an hour must be paid.

Exemptions - Canning and preserving occupations, motion pictures; clerical, professional, and technical services within an industry; handling farm products after harvest.

3. Employment between 10 p.m. and 6 a.m. allowed in Personal Service occupations only by permit from the Industrial Welfare Commission when the work is deemed essential to the operation of the establishment. Overtime rates of at least 50 cents an hour must be paid.

4. Employment between 11 p.m. and 6 a.m. only by permit from the Industrial Welfare Commission in Canning and Preserving industries. See also Wartime Provisions.

Plant Facilities

Seating - Suitable seats (at least 1 for every 2 women employed) required for female employees in any establishment, also for extras in the motion picture industry on sets or locations. Use of seats must be permitted when employees are not engaged in the active duties of their employment.

In any occupation, trade or industry, including canning and preserving and handling farm products after harvest (See Hours of Work for detailed coverage) employers must provide 1 adjustable

seat for each female worker at the work tables or machines, if the nature of the work permits.

Exemption granted only on satisfactory evidence that enforcement of the rule causes undue hardship to the employer and does not increase the comfort, health, or safety of employees.

Lunchrooms - Sanitary conditions regulated by the Industrial Welfare Commission, where lunchrooms are provided. See Chart II, Section 3.

Dressing and Rest Rooms -

A suitable dressing room must be provided by the employer where women employees may change their clothing in privacy and comfort, when the nature of the employment requires special work garments.

Any occupation, trade, or industry, unless exemption granted on proof that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, or safety of employees.

Specifically covered industries are: Public housekeeping and Laundry, dry cleaning and dyeing, Transportation, Amusement and recreation, and Motion Pictures (for extra employees).

Rest Rooms required for women employees; number of couches, beds, or cots graduated according to number of employees. Room to be open to women at all times.

Any occupation, trade, or industry, unless exemption granted on proof that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, or safety

Toilets - A sufficient number of water closets (at least 1 toilet for every 25 female employees, or fraction of that number, for first 200 women, and 1 toilet for every 30 women thereafter) must be provided for employees in any occupation, trade, or industry. When 5 or more men and women are employed, separate toilet rooms must be provided for women and plainly marked. Location of room must be accessible.

Investigation shows that enforcement of the rule works undue hardship on the employer and does not increase the comfort, health, and safety of employees.

Weight-lifting and other conditions of work

No female employee permitted to lift any receptacle which with contents weighs 50 pounds or over; nor to carry any receptacle weighing, with contents, 15 pounds or over, up or down a stairway of more than 5 feet in height from its base.

When female employees are to move receptacles weighing, with contents, 50 pounds or over, pulleys, casters, or other equipment must be provided to facilitate movement of the load.

However, by order of the Industrial Welfare Commission, the maximum load is set at 25 pounds, which in effect supersedes the higher statutory maximum of 50 pounds.

Coverage - Any trade, occupation, or industry; also, specifically includes the canning and preserving industry.

Variations - Commission may give exemption in writing if it is satisfied after investigation that enforcement of rule works undue hardship on employer and does not materially increase comfort, health, or safety of employees. See also Wartime Provisions.

Prohibited Occupations

No minors (that is, person under 21) may be employed or used on that portion of the premises used for the sale and service of alcoholic beverages for consumption on the premises.

No female may be employed in mixing alcoholic beverages containing distilled spirits on premises used for the sale of alcoholic beverages for consumption on the premises, unless she is the

~~Exception - Mixing of such beverages by an~~ on-sale licensee or by the wife of any such licensee on the premises for which the husband holds license.

Industrial Homework

Regulates the manufacture in a home of materials or articles for an employer unless for the use of himself or a member of his family, and covers every employer in the manufacturing industry wherever conditions make the law applicable.

Homework prohibited on articles of food or drink, articles for use in connection with the serving of food or drink, or articles of wearing apparel for the use of children 10 years of age or under; toys and dolls; tobacco; drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and articles of like character.

Permit must be obtained annually by employers; fee, $50.

workers must have a certificate, issued free; renewable annually; valid only for work performed by the applicant himself in his own home.

Homeworkers must be at least 16 years of age, and free from any communicable disease.

Employer required to keep records of homeworkers' names, addresses, earnings, and articles produced; also record of all persons supplying him with work or materials and of agents to whom he furnished work. He must label homework materials with his name and address in legible English.

The Industrial Welfare Division is authorized to issue orders prohibiting homework in any industry when it finds the employment injurious to the health and welfare of the homeworkers, or detrimental to labor standards established by law for factory workers in the industry. Variations - The Division may grant special permits to certain classes of handicapped persons to engage in homework if undue hardship results to them from the prohibitory order.

By virtue of this authority, the Division has prohibited homework on garments, including hand or machine processes, also preparing, altering, repairing, or finishing.

~~Exceptions~~ Hand knitting.

~~Variations~~ Special permits may be obtained by persons unable to work because of advanced age, physical or mental disability, or essential care of an invalid in the home.

Maternity Leave - No laws.

Wartime provisions

Until the cessation of hostilities in present war or the 91st day after adjournment of the 1945 legislature, whichever occurs first, ~~females employed~~ employers may employ females "at or for such hours, and at such type of work, and under such conditions, as may be helpful in increasing production and furthering the war effort." Employer must apply for permit within 24 hours after he employs females for a spread of hours, at types of work, or under conditions, that are illegal without permit.

Governor has authority to issue or deny permit and may or may not follow the recommendation of the State department responsible for enforcement of the particular law involved. Upon proper cause shown, Governor may at any time revoke, modify, or suspend existing permit.

For the duration of the war emergency, an employer actually engaged in war production may claim exemption from the laws prohibiting night work. If the Commission is satisfied that employment of women during these hours is "reasonably necessary to increase war production", a permit may be issued.

- Handling farm products - Effective Aug. 27, 1943
- Transportation — " Aug 27, 1943
- Amusement and recreation — " Aug 27, 1943

COLORADO

Hours of Work

Daily - Maximum, 8 hours during any 24 hours of any one calendar day.

Coverage - (Female 18 and over). Manufacturing, mechanical, or mercantile establishments (by interpretation, includes beauty parlors and filling stations), laundries, hotels or restaurants.

Variations - Minimum wage law provides that in emergencies longer hours may be allowed by the industrial commission if minimum wage is increased. (See Weekly.)

Weekly -

Maximum not set by law. Industrial commission orders covering women and minors under 18 provide for increased minimum wages beyond specified hours as follows:

Over 48 hours - Retail trade industry - Time and a half rates apply except during 7 "peak" weeks annually (designated by the employer, but must be spaced so that 3 weeks are in the first half of the year, and 4 weeks in the second half) when regular rates are applicable for maximum weekly hours of 56. During this period work may be spread over 7 days, but limited to 8 hours daily.

Over 48 hours - Public housekeeping - If an unusual, unexpected necessity for service to the public arises, over 8 hours a day may be worked, if 1 1/2 times regular rates paid for the excess hours. Employees may work on the 7th day, if they choose to do so. Time and a half rates apply to excess hours over 48.

Over 45 hours - Laundry industry - Over 8 hours a day and 6 days a week permitted during emergencies arising in the conduct of the industry if hours over 8 a day and 45 a week are paid for at 1 1/2 times the regular rate.

Over 44 hours - Beauty service industry - Excess hours must be paid for at 1 1/2 times the regular rates.

Day of Rest.

(Women and minors under 18). A 6-day week established in retail trades, beauty service industries, public housekeeping, and the laundry industry, with provision for emergency situations. (See Weekly hours of work.)

Meal and Rest Periods.

(Women and minors). In the laundry industry at least 1/2 hour must be allowed for lunch, and a rest period (length not stated) is required after 5 consecutive hours of work. In retail trades a rest period of at least 10 minutes is required for each 4 consecutive hours of employment or fraction thereof. Period not to be deducted from employee's working time.

Night Work - No law.

Plant Facilities

Seating.

Manufacturing, mechanical, or mercantile establishments that employ females must provide suitable seats for them, and permit them to use the seats when not necessarily engaged in their active duties.

Lunch Rooms - No law.

Dressing and Rest Rooms.

In factories, laundries, mills, workshops, or other places where the work makes it desirable or necessary to change clothing before leaving the building at close of day, the factory inspector may require separate dressing rooms for women and girls.

Toilet Rooms.

Factories, workshops, offices, bakeries, laundries, stores, hotels, schoolhouses, theaters, moving-picture houses, places of public assemblage, or other buildings, where 4 or more persons are employed, must provide a sufficient number of water closets within reasonable access for employees' use.

If both sexes are employed, toilet rooms separate and apart for each sex must be provided, plainly designated. Rooms to be properly screened and ventilated, and kept constantly in clean and sanitary condition.

In all plants employing both males and females, a ratio must be observed of at least 1 toilet for every 15 female employees and at least 1 to every 20 male employees.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female shall be employed in or about a coal mine or coke oven except in a clerical capacity.

Industrial Home Work.

Employers of women or minors in retail trade occupations are forbidden to give work that can be done on the employers' premises to such employees to be done elsewhere.

Tentative

Dec. 15, 1944

Maternity Leave - No law.

Maritime Provisions

No law.

Minimum Wage

Authority.

Industrial commission sets minimum for occupation and issues mandatory order; or commission appoints wage board, and issues orders on the board's recommendations.

Coverage.

1. Employees - Women; minors.

2. Industries or Occupations - Any.

Orders.

Retail trade -	Effective	Jan. 16, 1939
Beauty service -	"	Dec. 4, 1939
Public housekeeping -	"	June 26, 1940
Laundry -	"	Aug. 7, 1941

SUMMARY BY STATES

COLORADO

Hours of work:

Daily - 8 hours during any 24 hours of any one calendar day.

Coverage - Manufacturing, mechanical, or mercantile establishments (by interpretation, includes beauty parlors and filling stations), laundries, hotels or restaurants.

Weekly - Over 48 hours - Retail Trade industry - time and a half rates apply.

Variation - Regular rates applicable during 7 "peak" weeks annually (designated by the employer, but must be spaced so that 3 weeks are in the first half of the year, and 4 weeks in the second half). Maximum weekly hours - 56. Work may be spread over 7 days, but limited to 8 hours daily.

Over 48 hours - Public Housekeeping - If an unusual, unexpected necessity for service to the public arises, over 8 hours a day may be worked, if 1 1/2 times regular rates paid for the excess hours. Employees may work on the 7th day, if they choose to do so. Time and a half rates apply to excess hours over 48.

Over 46 hours a week or 8 hours a day, permitted during emergencies arising in the conduct of the Laundry industry if the excess hours are paid for at 1 1/2 times the regular rate.

Over 44 hours - Beauty Service Industry - Excess hours must be paid for at 1 1/2 regular rates.

Emergencies - Minimum wage law provides that in emergencies longer hours may be allowed by the Industrial Commission if minimum wage is increased.

For details of coverage, see Chart I, Colorado section, Hours of Work.

Day of Rest - A 6-day week established for women and minors under 18 in retail trades, Beauty Service industries, Public Housekeeping, and the Laundry industry, with provision for emergency situations. (See Hours of Work).

Meal and Rest Periods

At least 1/2 hour must be allowed for lunch, and a rest period (length not stated) required after 5 consecutive hours of work, in the Laundry industry.

Rest period of at least 10 minutes required for each 4 consecutive hours of employment or fraction thereof, in Retail trades. Period not to be deducted from employee's working time.

Plant Facilities

Seating - Manufacturing, mechanical, or mercantile establishments that employ females must provide suitable seats for them, and permit them to use the seats when not necessarily engaged in their active duties.

Lunchrooms - no law.

Dressing and rest rooms - In factories, laundries, mills, workshops, or other places where the work makes it desirable or necessary to change clothing before leaving the building at close of day, the factory inspector may require separate dressing rooms for women and girls.

Toilets - Factories, workshops, offices, bakeries, laundries, stores, hotels, schoolhouses, theaters, moving-picture houses, places of public assemblage, or other buildings, where 4 or more

persons are employed, must provide a sufficient number of water closets within reasonable access for employees' use.

If both sexes are employed, toilet rooms separate and apart for each sex must be provided, plainly designated. Rooms to be properly screened and ventilated, and kept constantly in clean and sanitary condition.

In all plants employing both males and females, a ratio must be observed of at least 1 toilet for every 15 female employees and at least 1 to every 20 male employees.

Weight-lifting and other conditions of work - No law.

Prohibited Occupations - No female shall be employed in or about a coal mine or coke oven except in a clerical capacity.

Industrial home work - Employers of women or minors in Retail Trade Occupations are forbidden to give work that can be done on the employers' premises to such employees to be done elsewhere.

Maternity leave - No laws.

Wartime Provisions - None.

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MWS

Colorado -

Culture ... Issues ... commission ... minimum ... issues mandatory ... OR ... Commission ... once ... issue ... mandatory ...

Coverage -

1. Equipment — women, minors.

2. Exemptions or Deductions —

Child ...

Basic Principle — Effective Dec 4, 1939
Public Assistance — " June 16, 1940
Work Injury — Effective June 16, 1939
— " Aug. 7 1941

SUMMARY - 32 STATES

COLORADO

Hours of Work -

Daily - 8 hours during any 24 hours of any one calendar day

Weekly - 48 hours, Retail Trades.
44 hours, Beauty Service.
48 hours, Laundries.

~~Overtime~~ - ~~Allowed during~~ emergencies by Commission ~~Order for~~ increased minimum wage ~~Order~~.

Coverage - Any manufacturing, mechanical, or mercantile establishment, laundry, hotel or restaurant. Female employees ~~18 years of age.~~

Day of Rest - ~~No provision.~~

Meal or rest period - ½-hour minimum in laundries; 1 hour in retail establishments.

Night work - ~~No prohibition.~~

Weight Lifting - No provision

~~Prohibited occupations~~ Occupations -

Mining - No females to be employed in or about the coal mines or coke ovens, except in an office in a clerical capacity.

General - Women may not be employed in any occupation under conditions of labor detrimental to their health or morals.

Plant Facilities -

Lunchrooms - No provisions.

Seats - Every employer of females in any manufacturing, mechanical or mercantile establishments must provide suitable seats for their use, and permit the employees to use the seats when not necessarily engaged in their active duties.

COLORADO

Toilets - Every factory, workshop, office, bakery, laundry, store, hotel, school house, theatre, moving picture house, place of public assemblage or other building in which 4 or more persons are employed must be provided with a sufficient number of toilet accommodations for the employees' use, and if both males and females are employed, separate accommodations must be provided for each sex, plainly designated.

Separate dressing rooms for women and girls must be provided, if required by the factory inspector, in factories, laundries, mills workshops and all other places where the nature of the work makes a clothing change necessary or desirable.

~~Homework - No provision.~~

Maternity Laws - No provision.

Partial Exemptions - No provision.

CONNECTICUT

5pp

Hours of Work

(1) Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females). Mercantile establishments.

Exemptions - Permanent, salaried employees in executive, managerial, or supervisory positions paid not less than $175 a month regularly.

Variations - 10 hours may be worked on 1 day in the week in order to make 1 shorter work day for that week. Overtime permitted December 18 to 25 if employer grants at least 7 holidays annually. In periods of emergency and of seasonal or peak demand, commissioner of labor may allow 10 hours a day, 52 hours a week, for not more than 4 weeks in any 12 months.

See also Wartime Provisions.

(2) Daily - Maximum, 9 hours.
Weekly - Maximum, 48 hours in any calendar week.

Coverage - (Females). Manufacturing (includes laundry) or mechanical establishment.

Variations - In cases of emergency and of seasonal or peak demand, the commissioner of labor may allow 10 hours a day, 55 hours a week, for not more than 8 weeks in any 12 months. The minimum-wage orders for laundry and cleaning and dyeing require that time and a half be paid for hours in excess of 48 a week.
See also Wartime Provisions.

(3) Daily - Maximum, 9 hours.
Weekly - Maximum, 52 hours.

Coverage - (Females). Public restaurants, cafes, dining rooms, barber shops, hairdressing or manicuring establishments, or photograph galleries.

Exemption - Hotels.

Variations - 10 hours may be worked on 1 day in the week in order to make 1 shorter work day during that week.

The minimum-wage order for beauty shops requires payment of an additional rate for hours in excess of 48 a week; to part-time employees, for hours in excess of 8 a day.
See also Wartime Provisions.

(4) Daily - No law.
Weekly - Maximum, 58 hours.

Coverage - (Women). Bowling alleys, shoe-shining establishments, billiard or pool rooms.

Variation - See Wartime Provisions.

Day of Rest.

(1) (All employees). A 6-day week required in any commercial occupation or the work of any industrial process, excepting farm or personal service; druggists; transportation; sale or delivery of milk, food, or newspapers; continuous operations; watchmen, janitors, etc.; maintenance work.

Variations - Work on the 7th day permitted in cases of emergency. See also Wartime Provisions.

(2) (Females). A 6-day week established in mercantile establishments, also in public restaurants, cafes, dining rooms, barber shops, hair dressing or manicuring establishments or photograph galleries.

Exemptions - Permanent salaried employees in executive, managerial, or supervisory positions paid not less than $175 a month regularly; hotels.

Variations - See Wartime Provisions.

Meal and Rest Periods - No laws.

Night Work.

(1) (Women). Employment not permitted after 10 p.m. in bowling alleys, shoe shining parlors, billiard or pool rooms.

(2) (Women). Employment prohibited between 10 p.m. and 6 a.m. in manufacturing (including laundries), mechanical, or mercantile establishments; also in public restaurants, cafes, dining rooms, barber shops, hair-dressing or manicuring establishments, or photograph galleries.

Exemptions - Physicians, surgeons, nurses, pharmacists, attorneys, teachers, social service workers, and display workers receiving at least $150 a month and engaged chiefly in arranging and displaying merchandise in accordance with their own designs; hotels.

Variations - See Wartime Provisions.

Plant Facilities 1/

Seating.

Mercantile, mechanical, or manufacturing establishments must provide suitable seats for all female employees, and permit employees to use the seats when not necessarily engaged in the active duties of employment.

Lunch Rooms - No law.

Dressing and Rest Rooms 1/ - No law.

Toilet Rooms.1/

Manufacturing (including laundries), mechanical or mercantile establishments, and public restaurants, must provide adequate toilet accommodations for employees. Accommodations must be arranged to provide reasonable privacy for employees of both sexes; must be plainly designated by sex.

Any establishment employing both males and females must provide separate toilet rooms or compartments for each sex, plainly designated. Ratio: 1 water closet to every 20 persons of each sex, or fraction thereof up to 100 persons; 1 to every 25 of each sex for over 100..

Tenant factories, mercantile or office buildings must provide separate toilets for tenants, within reasonable access.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female other than the wife or daughter of the proprietor, shall be employed in any tavern.

Industrial Home Work.

Home work is restricted to work for employers located in the State; to industries in which home work is customary and necessary; to processes performed by simple hand methods; and to workers who are handicapped or responsible for care of an invalid in the home. Worker must be at least 16 years of age, have official permits and live in the home where the work is done.

1/ The department of labor has broad powers to enforce the statute requiring employer to provide a safe work place for employees. The Sanitary Code which is based on this law contains detailed specifications for dressing, wash, and toilet rooms.

Employer must obtain a certificate in order to distribute materials for home work. Annual fee is $25.

Employer must keep record of each worker's name and address, kind and amount of materials distributed, rates paid, and each worker's total weekly earnings.

Owner of premises where home work is done must have a license, issued only after inspection. Fee is $25.

Wage rates must not be lower than those in a factory or other place of business for similar work. Laws regulating hours and working conditions in factories apply also to home work.

Maternity Leave.

No owner, proprietor, manager, or foreman, or other person in authority in any factory, mercantile establishment, mill or workshop shall knowingly employ, or permit to be employed, a woman for a period of 4 weeks before childbirth or 4 weeks afterward.

Wartime Provisions

By the War Powers Act, the Governor is authorized to modify or suspend, in whole or in part, by order, any statute, regulation, or requirement when in his opinion it conflicts with efficient and expeditious participation in the war effort. Statute limits to 6 months the period in which any such order may be in force.

During the war emergency and for 6 months after hostilities cease, the Governor, on employer's application and for cause shown, may extend overtime period beyond 8 weeks if he deems extension necessary to the war effort. Applies to manufacturing (including laundries) or mechanical establishments.

In event of war or other serious emergency, the Governor may suspend the limitations on evening or night work, in manufacturing, mechanical, or mercantile establishments.

War order issued by the Governor, and twice renewed, permits women over 21 to be employed between 10 p.m. and 6 a.m. in bona fide and well established restaurants as waitresses, cooks, and counter girls; but working hours are limited to 9 daily (except for one 10-hour day per week) and 52 hours and 6 days in one week. No night shift for women employees may end between 12 midnight and 6 a.m.

CONNECTICUT

Dec 19, 1944

Minimum Wage

Authority.

Commissioner of labor issues mandatory order, on his final approval of wage board recommendations as to minimum rates for occupation.

Coverage.

(1) Employees - All persons.

(2) Industries or Occupations - Any industry, trade, business, or occupation (other than domestic service and farm labor) paying an unfair and oppressive wage.

Orders.

		Effective date
Laundries (Women and minors).	Effective	June 3, 1940
Cleaning and dyeing (Women; minors)		Oct. 7, 1940
Beauty shops (All employees)		Mar. 3, 1941
Mercantile (All employees)		June 1, 1942

SUMMARY - BY STATES

CONNECTICUT

Hours of Work

A. Daily - 8 hours.

Weekly - 48 hours.

Coverage - Mercantile establishments.

Exemptions - Permanent, salaried employees in executive, managerial, or supervisory positions paid not less than $175 a month regularly.

Variations - 10 hours may be worked on 1 day in the week in order to make 1 shorter work day for that week. Overtime permitted December 18 to 25 if employer grants at least 7 holidays annually. In periods of emergency and of seasonal or peak demand, Commissioner of Labor may allow 10 hours a day, 52 hours a week, for not more than 4 weeks in any 12 months.

B. Daily - 9 hours.

Weekly - 48 hours maximum in any calendar week.

Coverage - Manufacturing (includes laundry) or mechanical establishment.

Variations - In cases of emergency and of seasonal or peak demand, the Commissioner of Labor may allow 10 hours a day, 55 hours a week, for not more than 8 weeks in any 12 months. The minimum-wage orders for laundry and cleaning and dyeing require that time and a half be paid for hours in excess of 48 a week.

C. Daily - 9 hours.

Weekly - 52 hours.

Coverage - Public restaurants, cafes, dining rooms, barber shops, hairdressing or manicuring establishments, or photograph galleries.

Exemption - Hotels.

Variations - 10 hours may be worked on 1 day in the week in order to make 1 shorter work day during that week.

The minimum-wage order for beauty shops requires payment of an additional rate for hours in excess of 48 a week; to part-time employees, for hours in excess of 8 a day.

Daily - no law.

Weekly - 58 hours.

Coverage - Bowling alleys, shoe-shining establishments, billiard or pool rooms.

Day of rest - 6-day week established for female employees in mercantile establishments, public restaurants, cafes, dining rooms, barber shops, hair dressing or manicuring establishments or photograph galleries.

Exemption - Hotels.

Variations - Work on the 7th day permitted in cases of emergency.

See also Wartime Provisions.

Meal and Rest Periods - no laws.

Night Work - Not permitted after 10 p. m. in bowling alleys, shoe shining parlors, billiard or pool rooms;

Not between 10 p.m. and 6 a.m. in manufacturing (including laundries) mechanical, or mercantile establishments; public restaurants, cafes, dining rooms, barber shops, hair dressing or manicuring establishments, or photograph galleries.

Exemptions - Hotels; physicians, surgeons, nurses, pharmacists, attorneys, teachers, social service workers, and

display workers receiving at least $150 a month and engaged chiefly in arranging and displaying merchandise in accordance with their own designs; Hotels,

Variations - See Wartime Provisions.

Plant Facilities

Seating - Mercantile, mechanical, or manufacturing establishments must provide suitable seats for all female employees, and permit employees to use the seats when not necessarily engaged in the active duties of employment.

Lunchrooms - no law.

Dressing and Rest Rooms - No law.

Toilets - Manufacturing (including laundries), mechanical or mercantile establishments, and public restaurants, must provide adequate toilet accommodations for employees. Accommodations must be arranged to provide reasonable privacy for employees of both sexes; must be plainly designated by sex.

Any establishment employing both males and females must provide separate toilet rooms or compartments for each sex, plainly designated. Ratio: 1 water closet to every 20 persons of each sex, or fraction thereof up to 100 persons; 1 to every 25 of each sex for over 100.

Tenant factories, mercantile or office buildings must provide separate toilets for tenants, within reasonable access.

Refer to Chart II D for further details.

Weight-lifting and Other Conditions of Work -

No laws.

Prohibited Occupations - No female other than the wife or daughter of the proprietor, shall be employed in any tavern.

Industrial Homework - Restricted to homework for employers located in the State; to industries in which homework is customary and necessary; to processes performed by simple hand methods; and to workers who are handicapped or responsible for care of an invalid in the home. Workers must be at least 16 years of age, have official permits, and live in the home where the work is done.

Employers must obtain a certificate in order to distribute materials for homework. Annual fee, $25.

Must record each worker's name and address, kind and amount of materials distributed, rates paid, and each worker's total weekly earnings.

Owner of premises where homework is done must have a license. Issued only after inspection. Fee, $25.

Wage rates not to be lower than those in a factory or other place of business for similar work. Laws regulating hours and working conditions in factories apply also to homework.

Maternity Leave - No owner, proprietor, manager, or foreman, or other person in authority in any factory, mercantile establishment, mill or workshop, shall knowingly employ, or permit to be employed, a woman for a period of 4 weeks before childbirth or 4 weeks afterward.

Wartime Provisions - By the war powers act, the Governor is authorized to modify or suspend, in whole or in part, by order, any statute, regulation, or requirement when in his opinion it conflicts with efficient and expeditious participation in the war effort. Statute limits to 6 months the period in which any such order may be in force.

I During the war emergency and for 6 months after hostilities cease, the Governor, on employer's application and for cause shown, may extend overtime period beyond 8 weeks if he deems extension necessary to the war effort. Applies to manufacturing (including laundries) or mechanical establishments.

In event of war or other serious emergency, the Governor may suspend the limitations on evening or night work, in manufacturing, mechanical, or mercantile establishments.

~~The Governor's War Order No. 11, dated Feb. 1, 1944,~~ permits women over 21 to be employed between 10 p. m. and 6 a. m. in bona fide well established ~~public~~ restaurants as waitresses, cooks, and counter girls, ~~until August 1, 1945,~~ but working hours are limited to 9 daily (except for one 10-hour day per week) and 52 hours and 6 days in one week. No night shift for women employees ~~is~~ may end between 12 midnight and 6 a. m.

New order issued by the Governor, and now renewed.

6 p6

Connecticut -

Authority to issue & revoke permits, to set hours & wages, to make rules & regulations as to minimum rates for & regulation.

Scope

1. Employers - All persons

2. Industries or Occupations -

All except those engaged in domestic service in private homes, persons employed as outside salesmen, & those employed in agriculture.

Orders, records -

Typist insert in list on other side

Pursuant to Act (All employers) - Mar. 3, 1941

(over)

Insert Penalty clause from over

Laundries ~~Effective~~ June 3, 1940

Cleaning ~~women~~ ~~men~~ Oct. 7, 1940

Mercantile ~~all employees~~ June 1, 1942

~~Laundries - Towel supply~~

~~Restaurants - Hotels~~

SUMMARY - BY STATES

CONNECTICUT

Hours of Work -

Manufacturing or mechanical establishments -
(Manufacturing establishment includes laundry ~~- Dec. 1943~~.)

9-hour day

48 hours, maximum in any calendar week

Emergency or peak period -

10-hour day

55 hours maximum in any calendar week

Total of such weeks limited to 8 in 12 consecutive months.

~~Emergency~~ - The Governor may extend the number of weeks beyond 8 if he finds it necessary as a war measure. This power valid until 6 months after war ends.

Mercantile establishments -

8-hour day

6-day, 48-hour week (calendar)

One 10-hour day in a calendar week allowed to make 1 'short day.' Employers exempted from hour restrictions during period December 18 to 25 of any year they allow at least 7 holidays with pay to their female employees.

Emergency or peak period -

10-hour day

52 hours in one calendar week. But total such weeks not to exceed 4 in any 12 months.

Emergency determined by Commissioner of Labor, and permit necessary for extended hours.

~~Exceptions~~ - ~~These~~ provisions ~~do~~ not apply to permanent ~~salaried~~ employees receiving ~~regularly~~ at least $175 per month in executive, managerial or supervisory positions.

Bowling alleys, shoe shine parlors, billiard and pool rooms - 58 hours in any week

Public restaurants, cafes, dining rooms, barber shops, hair dressing or manicuring establishments, or photograph galleries -

9 hours in any day except one 10-hour day each week

6 days, or 52 hour maximum in any 1 week

~~Exception~~ - Hotels.

Day of Rest - No provision other than general Sunday laws.

Night Work - Not permitted after 10 p.m. in bowling alleys, shoe shine parlors, billiard or pool rooms; nor between 10 p.m. and 6 a.m. in any public restaurant, cafe, dining room, barber shop, hair dressing or manicuring establishment or photograph gallery;

Nor between 10 p.m. and 6 a.m. in any manufacturing, mechanical, or mercantile establishment.

Exemptions - Physicians, surgeons, nurses, pharmacists, attorneys at law, teachers, social service workers, merchandise display workers earning at least $150 a month in salary are not subject to the night work limitations.

~~Exception~~ - In wartime or other emergency, the governor may suspend the night work limitations ~~as to any~~ industries or occupations he deems necessary for war requirements.

public restaurants as waitresses, ~~cooks~~, and counter girls, until August 1, 1944; but working hours limited to 9 daily (except for one 10-hour day per week) and 54 hours or 6 days in one week. No night shift for women employees between midnight and 6 a.m.

Meal or rest period - No provisions.

Prohibited occupations - No female, other than proprietor's wife or daughter, to be employed in any tavern.

Plant facilities -

Lunchrooms - No provisions.

Seats - Any employer of females in any mercantile, mechanical, or manufacturing establishment must provide suitable seats for the use of all the female employees, and permit the use of the seats by employees when not necessarily engaged in their active duties.

Toilets - Every manufacturing, mechanical and mercantile establishment and public restaurant may be required to provide adequate toilet accommodations for both sexes employed or engaged in the establishment, when the labor commissioner finds such accommodations necessary. The owner of any building occupied by any such establishments must furnish the accommodations; the occupant of the building must maintain them according to the sanitary regulations of this act.

Homework -

Coverage - (a) Distribution of materials, directly or indirectly to a home for processing and return to the distributor or his agent, unless for the personal use of such person or a member of his family; (b) processing of such material by an individual in his or her home.

Prohibitions - General distribution illegal. But the Commissioner of Labor may permit distribution to (1) any individual 16 years of age or over, handicapped by infirmity(other than contagious disease) or home care of a household member; (2) for simple hand operations in those industries or occupations in Connecticut where homework is customary, to prevent undue hardship to labor or industry.

No certificate may issue for work in any home where there is communicable disease.

Wage rates paid must not be lower than factory or business rates for similar work.

Homework limited to that performed for establishments located in Connecticut. No harmful or dangerous apparatus or substances to be used.

Licensing -

Distributor must have certificate. Annual fee $25.00.

Homeworker must have permit. Such permit covers only specified materials. Certificate and permit revocable by Commissioner at any time for cause.

Hours and working conditions -

Home workers governed by the general statutes covering the working hours and conditions of women and minors in manufacturing and mechanical establishments.

Miscellaneous -

Labels not expressly required.

Record must be kept by distributor of worker's names and addresses, kind and quantity of materials distributed, pay rates, and total weekly earnings of each worker.

? (survey to check) Managers, & foremen

CONNECTICUT - 5

Maternity ~~term~~ leave - No employer, or his agent, in any factory, mercantile establishment, mill or workshop, shall knowingly employ, or permit employment therein, of any woman within 4 weeks of confinement or within 4 weeks after childbirth.

Wartime ~~exemptions~~ provisions - See several provisions under "Maximum hours of work." 1943 Supplement, Sec. 21g, empowers the Governor to modify or suspend laws whenever he deems such action essential to speed the war effort. Provisions extended to Feb. 1, 1945 by Act (House Bill No. 4-X), 1st Special Session, 1944.

Women's Bureau
Department of Labor
Washington

January 15 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

DELAWARE

Hours of Work

Daily - 10 hours. (Maximum.)

Weekly - 55 hours.

Coverage - (Females 16 and over). Mercantile, mechanical (including beauty shops), or manufacturing establishments, laundry, baking or printing establishments, telephone and telegraph offices or exchanges, restaurants, hotels, places of amusement, dressmaking establishments, or offices.

Exemptions - Canning or preserving of perishable fruits and vegetables.

Variations - 12 hours may be worked on 1 day a week provided weekly maximum is not exceeded.

Day of Rest.

A 6-day week established for employees and employments covered by the Daily-Weekly "Hours of Work" law.

Meal and Rest Periods.

At least ½ hour for meals. No female may be employed for more than 6 consecutive hours without an interval of at least 3/4 hour.

Coverage - Employees and employments covered by the Daily-Weekly "Hours of Work" law.

Variations - Work period of 6½ hours allowed, if employment ends not later than 1:30 p.m. and worker is dismissed for the day.

Night Work.

(1) Employment prohibited from 11 p.m. to 6 a.m.

Coverage - (Females 16 and over). Mechanical (including beauty shops) or manufacturing establishments, laundries, baking or printing establishments, offices, or dressmaking establishments.

Exemptions - Canning or preserving of perishable fruits and vegetables; establishments where continuous operations are necessary.

Variations - See Wartime Provisions.

(2) If any part of the day's work is performed between 11 p.m. and 7 a.m., employment may not exceed 8 hours in any 24.

Coverage - (Females 16 and over). Mercantile establishments, telephone or telegraph offices or exchanges, restaurants, hotels, places of amusement.

(3) Employment prohibited from 10 p.m. to 6 a.m.

Coverage - (Persons under 21). Messengers for telephone, telegraph or messenger companies.

Exemptions - Cities of 20,000 or less population.

Plant Facilities

Seating.

At least 1 seat for every 3 females employed at one time required in mercantile, mechanical, transportation or manufacturing establishments, laundries, baking, printing, or dressmaking establishments, places of amusement, telephone or telegraph offices or exchanges, hotels, restaurants, or offices. Must be suitable, conveniently accessible, and use of them permitted.

Lunch Rooms.

Establishments in which white lead, arsenic, nicotine, or other poisonous or injurious substances, fumes, or gases are present or in which dust, lint, or particles of material are created by machinery or by the material in process of manufacture, must provide a suitable room, free from gases, poisonous or injurious substances, fumes, dust, lint, or particles of materials. Washing facilities must be supplied - hot water, soap, and towels (individual or paper). Employees not permitted to remain in workroom during meal time.

Dressing and Rest Rooms.

At least 1 dressing room of adequate size is required for exclusive use of women, if character of work makes change of clothing necessary or customary, in establishments listed under Seating. Individual lockers or hooks and a suitable number of seats must be provided; also at least 1 washing facility for each 25 women.

Toilet Rooms.

If 4 or more persons - male and female - employed in establishments listed under Seating, separate water closets must be provided for each sex and be plainly designated. If 15 or fewer females employed, at least 1 water closet must be provided. If over 15 employed, the ratio is 1 to every 25 female employees. Water closets must be suitable, and easily accessible to women employees.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No person under 21 years of age may be employed in any room where intoxicating liquors are sold or dispensed except in an establishment where liquors are sold for medical or scientific purposes.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

For duration of present war and for 6 months thereafter or until Governor proclaims termination of the present emergency, whichever occurs first, provisions prohibiting or regulating the employment of women at night are not applicable in any mechanical or manufacturing establishment, laundry, or baking establishment.

Minimum Wage

No law.

~~SUMMARY - BY STATES~~

~~DELAWARE~~

1. ~~Hours of Work~~

Daily - 10 hours.

Weekly - 55 hours.

Coverage - Females 16 and over) Mercantile, mechanical (including beauty shops), or manufacturing establishments, laundry, baking or printing establishments, telephone and telegraph offices or exchanges, restaurants, hotels, places of amusement, dressmaking establishments, or offices.

Exemptions - Canning, preserving, ~~or preparation for canning or preserving~~ of perishable fruits and vegetables.

Variations - 10 hours may be worked on 1 day a week provided weekly maximum is not exceeded.

2. Day of Rest - a 6-day week established for ~~women in occupations listed under~~ employees and employments covered by the Hours of Work law above.

3. ~~Meal and Rest Periods~~ - At least ½ hour for meals. No female may be employed for more than 6 consecutive hours without an interval of at least ¼ hour.

Coverage - Employees and employments covered by Hours of Work law.

Variations - Work period of 6½ hours allowed, if employment ends not later than 1:30 p.m. and worker is dismissed for the day.

~~Overtime - [illegible] Hours of Work.~~

4. ~~Night Work~~ Prohibited ~~For period~~ 11 p.m. to 6 a.m. ~~for~~ females 16 ~~and~~ over.

Coverage - Mechanical (including beauty shops) or manufacturing establishments, laundries, baking or printing establishments, offices, or dressmaking establishments.

Exemptions - Canning or preserving of perishable fruits and vegetables; establishments where continuous operations are necessary.

2. If any part of the day's work is performed between 11 p.m. and 7 a.m., employment may not exceed 8 hours in any 24.

Coverage - Mercantile establishments, telephone or telegraph offices or exchanges, restaurants, hotels, places of amusement.

3. Prohibited ~~for girls~~ 10 p.m. to 6 a.m.

Coverage - (Persons under 21) Messengers for telephone, telegraph or messenger companies.

Exemptions - Cities of 20,000 or less population.

Variations - See Wartime Provisions.

Plant Facilities

Seating - At least 1 seat for every 3 females employed at one time required. Must be suitable, conveniently accessible, and use of them permitted.

~~Coverage~~ - Mercantile, mechanical, transportation or manufacturing establishments, laundries, baking or printing establishments, places of amusement, telephone or telegraph offices or exchanges, hotels, restaurants, or offices.

Lunchrooms - A suitable room must be provided free from gases, poisonous or injurious substances, fumes, dust, lint, or particles of materials. Washing facilities must be supplied - hot water, soap, and towels (individual or paper). Employees not permitted to remain in workroom during meal time.

~~Coverage~~ - Establishments in which white lead, arsenic, nicotine, or other poisonous or injurious substances, fumes, or gases are present or in which dust, lint, or particles of material are

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created by machinery or by the material in process of manufacture

Dressing Rooms, Rest Rooms - At least 1 dressing room of adequate size for exclusive use of women, if character of work makes change of clothing necessary or customary.

Coverage - Mercantile, mechanical, transportation or manufacturing establishments, laundry, dyeing or printing establishments, dressmaking establishments, places of amusement, telephone or telegraph offices or exchanges, hotels, restaurants, or offices.

Toilets - If 4 or more persons - male and female - employed, separate water closets must be provided for each sex and be plainly designated. If 15 or fewer females employed, at least 1 water closet must be provided. If over 15 employed, the ratio is 1 to every 25 female employees. Water closets must be suitable, and easily accessible to women employees.

Coverage - Same as for "Dressing and Rest Rooms" above.

For other details refer to Chart II, D.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No person under 21 years of age may be employed in any room where intoxicating liquors are sold or dispensed except in an establishment where liquors are sold for medical or scientific purposes.

Industrial Homework - No law.

Maternity Leave - No law.

DELAWARE

Wartime Provisions - For duration of present war and for 6 months thereafter or until Governor proclaims termination of the present emergency, whichever occurs first, provisions prohibiting or regulating the employment of women at night are not applicable in any mechanical or manufacturing establishment, laundry, or baking establishment.

Women's Bureau
US Department of Labor
Washington

Jan. 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

DISTRICT OF COLUMBIA

Hours of Work

Daily - 8 hours. (Maximum)

Weekly - 48 hours.

Coverage - (Females 18 and over). Manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, telegraph or telephone establishments or offices, or express or transportation companies.

Variations - See Wartime Provisions.

Day of Rest.

A 6-day week established for employees and employments covered by Daily-Weekly Hours of Work law.

Meal and Rest Periods.

No female shall be employed or permitted to work more than 6 hours continuously without an interval of at least 3/4 hour.

Coverage - (Females). Employments covered by Daily-Weekly Hours of Work law.

Exemption - Establishments in which 2 or fewer females are employed.

Variations - 6½ hours may be worked if employment ends not later than 1:30 p.m. and worker is dismissed for the day.

Night Work.

(Females between 18 and 21). Employment as messengers between 7 p.m. and 6 a.m. prohibited.

Plant Facilities

Seating.

Proper and suitable seats, rests, or stools must be provided for all female employees in stores, shops, offices or manufactories. Use of seats to be allowed as may be necessary.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

DISTRICT OF COLUMBIA —cont'd.

Toilet Rooms.

Separate water closets for each sex, in the ratio of 1 water closet for every 15 persons or less, is required in schools, stores, warehouses, manufacturing establishments or other structures where men or women are or will be employed. See Wartime Provisions.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work.

Women and minors employed on home work in manufacturing and wholesaling occupations are not to receive less than the minimum wage established for plant workers by official order of the minimum wage board. Employer must keep records for all home workers, as required for plant employees.

Maternity Leave - No law.

Wartime Provisions

Until June 30, 1945, or such earlier date as the Congress by resolution may determine, the District of Columbia Minimum Wage and Industrial Safety Board may issue temporary permits allowing employers to employ females additional hours, but not more than 54 hours or 6 days a week. Such overtime must be essential to the war effort. Payment of time and a half is required for such hours.

In the present emergency, because of war requirements, use of toilets by both sexes permitted.

Minimum Wage

Authority.

Minimum wage board issues mandatory order, and its final approval of minimum recommended by wage conference.

Coverage.

(1) Employees - Women and minors.

(2) Industries or occupations - Any, except domestic service.

Orders.

Retail trade	Effective February 14, 1938	
Public housekeeping	"	May 8, 1938
Laundry, Dry Cleaning, Dyeing	"	July 5, 1938
Beauty culture	"	September 26, 1938
Office workers, etc. and previously unclassified occupations	"	March 13, 1939
Manufacturing and wholesaling	"	June 5, 1939

~~SUMMARY - 51 STATES~~

DISTRICT OF COLUMBIA

~~Hours of Work~~

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 18 and over) Manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, telegraph or telephone establishments or offices, or express or transportation companies.

Variations - See Wartime Provisions.

~~Day of Rest~~ - 6-day week established for ~~women in occupations shown under~~ employees and employments covered by the Hours of Work law.

~~Meal and Rest Periods~~ - No female shall be employed or permitted to work more than 6 hours continuously without an interval of at least 3/4 hour.

Variation - 6½ hours may be worked if employment ends not later than 1:30 p.m. and worker is dismissed for the day.

Coverage - ~~Are~~ (Females) Employments covered by the Hours of Work law.

Exemption - Establishments in which 2 or fewer females are employed.

~~Night Work~~ - (Females between 18 and 21 ~~are not to be employed~~ as messengers ~~during the period~~ between 7 p.m. and 6 a.m.) Employment prohibited.

~~Plant Facilities~~

Seating - Proper and suitable seats, rests, or stools must be provided for all female employees. Use of seats allowed as may be necessary.

~~Coverage~~ - Stores, shops, offices or manufactories.

Lunchrooms - No law.

Dressing and rest rooms - No law.

Toilets - Separate water closets for each sex required in schools, stores, warehouses, manufacturing establishments or other structures where men or women are or will be employed.

1 water closet for every 15 persons or less.

Variation - See Wartime provisions.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - Women and minors employed on homework in manufacturing and wholesaling occupations are not to receive less than the minimum wage established for plant workers by official order of the minimum wage board. Employer must keep records for all homeworkers, as required for plant employees.

Maternity ~~leaves~~ - No law.

Wartime Provisions - Until June 30, 1945, or such earlier date as the Congress by resolution may determine, the District of Columbia Minimum Wage and Industrial Safety Board may issue temporary permits allowing employers to employ females additional hours, but not more than 54 hours or 6 days a week. Such overtime must be essential to the war effort. Payment of time and a half is required for such hours.

In the present emergency, because of war requirements, use of toilets by both sexes permitted.

D. C.

Minimum Wage

1. Establishing a minimum wage for various occupations, and the fixing of minimum wages recommended by wage conferences.

Coverage —

1 (1) Employees - Women; minors.

2 (2) Industries or occupations covered, exempt from the provisions.

Orders, when —

Effective June 5, 1929

Retail trade " Feb. 14, 1938

Public laundries " May 3, 1938

Canneries, packing " July 5, 1938

Bakeries " Sept. 26, 1938

Miscellaneous, etc. " March 13, 1939

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

FLORIDA

Hours of Work

Daily - No law.

Weekly - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Rest Rest - No law.

Plant Facilities

Seating.

Suitable chairs, stools, or sliding seats attached to counter or wall must be provided for employees of both sexes in mercantile or other business pursuits requiring employees to stand or walk during active duties. Use must be permitted when employees not on active work and not required to stand in proper performance of duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No person under 21 years of age shall be employed, permitted or suffered to work in, about, or in connection with any pool room, billiard room, brewery, saloon, bar room, or any place where intoxicating liquors are manufactured or sold. The following exemptions are made: Professional entertainers 18 to 21 years of age who are not in school; drug or grocery stores licensed to sell beer and wine for consumption off the premises; bell boys, elevator boys, and others in hotels if work is apart from portion of hotel where alcoholic beverages are sold.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY - 24 STATES

FLORIDA

Hours of Work - No law.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Suitable chairs, stools, or sliding seats attached to counter or wall must be provided for employees of both sexes, ~~and their~~ must be use permitted when employees not on active work and not required to stand in proper performance of duties.

~~Coverage~~ - Mercantile or other business pursuits requiring employees to stand or walk during active duties.

Lunchrooms - No law.

Dressing and rest rooms - No law.

Toilets - No law.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No person under 21 years of age shall be employed, permitted or suffered to work in, about, or in connection with any pool room, billiard room, brewery, saloon, bar room, or any place where intoxicating liquors are manufactured or sold. The following exemptions are made:

~~Exceptions~~ - Professional entertainers 18 to 21 years of age who are not in school; drug or grocery stores licensed to sell beer and wine for consumption off the premises; bell boys, elevator boys, and others in hotels if work is apart from portion of hotel where alcoholic beverages are sold.

FLORIDA

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions - None.

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

GEORGIA

Hours of Work

Daily - Maximum, 10 hours.
Weekly - Maximum, 60 hours.

Coverage - (All employees). Cotton or woolen manufacturing establishments.

Exemptions - Engineers, firemen, watchmen, mechanics, teamsters, yard employees, clerical force, cleaners, repairmen.

Variations - More than 10 hours a day permitted if weekly hour maximum not exceeded. Time lost because of accident or other unavoidable circumstances may be made up, not to exceed 10 days.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats must be provided for female employees in manufacturing, mechanical, or mercantile establishments. Use of seats must be permitted when woman employee is not necessarily engaged in the active duties of her employment.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

War Provisions

No law.

Minimum Wage

No law.

SUMMARY - 51 STATES

GEORGIA

Hours of Work

Daily - 10 hours

Weekly - 60 hours.

Coverage - All employees in cotton or woolen manufacturing establishments.

Exemptions - Engineers, firemen, watchmen, mechanics, teamsters, yard employees, clerical force, cleaners, repairmen.

Variations - More than 10 hours a day permitted if weekly hour maximum not exceeded.

Time lost because of accident or other unavoidable circumstances may be made up, not to exceed 10 days.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Suitable seats must be provided for female employees in manufacturing, mechanical, or mercantile establishments. Use of seats must be permitted when woman employee is not necessarily engaged in the active duties of her employment.

Lunchrooms - No law.

Dressing and Restrooms - No law.

Toilets - No law.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - No law.

~~Hawaii - 44 hour week~~

Hawaii

~~Hours of Work~~

~~Minors~~ - 40 hrs.

~~Women~~ - ~~8 hours~~ No law.

Coverage - (All employees) Any private employment.

Exemptions - Persons with a guaranteed monthly salary of $150 or more; agricultural or domestic work; work by certain near relatives; executive, administrative, supervisory, or professional work, outside salesmen and collectors; ~~fishery~~ work including packing of product for shipment and processing, or distributing product; railways, trolleys or buses; seamen, employment under Federal Fair Labor Standards act of 1938.

Regulations - Overtime must be paid for at time and a half. Except in cases of extraordinary emergency, split shifts if worked must fall within 14 of the 44 hours.

~~Day of rest~~ - No law.

~~Meal and Rest Periods~~ - No law.

~~Night Work~~ - No law.

~~Night Restrictions~~

~~Weight Lifting and other Conditions of Work~~ - No law.

~~Prohibited Occupations~~ - No law.

~~Industrial Homework~~ - No law

~~Maternity Leave~~ - No law.

~~Marital Provisions~~

~~Seniority~~ - No law.

~~Vacations~~ - No law.

~~Sick Leave~~ - No law.

~~Holidays~~ - No law.

~~Equal Pay~~ - No law.

No law

Minimum Wage
Equal Pay

MW Bus

Hawaii –

Situation ⊖ State, city ~~main~~ main cities.

Coverage ⊖

1) Employees – men, women; minors

2) Industries or Occupations – all employment

(but excluding numerous exceptions)

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

IDAHO

Hours of Work

Daily - 9 hours in any day of 24 hours.

Weekly - No law.

Coverage - (Females 18 and over). Mechanical or mercantile establishments, laundries, hotels, or restaurants, telegraph or telephone establishments, offices, express or transportation companies.

Exemptions - Harvesting, packing, curing, canning, or drying perishable fruits or vegetables. Also, women employed by railroads in interstate commerce, including work as telegraphers or printer operators.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Establishments where females are employed must provide suitable seats and permit the female employees to use them when not necessarily engaged in the active duties of employment.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY - BY STATES

IDAHO

Hours of Work

Daily - 9 hours in any day of 24 hours.

Weekly - None.

Coverage - (Females 16 and over) Mechanical or mercantile establishments, laundries, hotels, or restaurants, telegraph or telephone establishments, offices, express or transportation companies.

Exemptions - Harvesting, packing, curing, canning, or drying perishable fruits or vegetables. Also, women employed by railroads in interstate commerce, including work as telegraphers or printer operators.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Establishments where females are employed must provide suitable seats and permit the female employees to use them when not necessarily engaged in the active duties of employment.

Lunchrooms - No law.

Dressing and Restrooms - No law.

Toilets - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - No law.

ILLINOIS

Hours of Work

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 16 and over). Mechanical or mercantile establishments, factories, laundries, hotels, restaurants, barber shops, beauty parlors, telegraph or telephone establishments or offices thereof, places of amusement, express or transportation or public utility business, common carrier, public or private institutions or offices thereof.

Exemptions - Graduate nurses, operators for a telephone company in an agency in a private residence or place of business other than an exclusive telephone establishment.

Variations - In mercantile establishments, 9 hours a day, 54 hours a week may be worked during 4 weeks in calendar year. The minimum-wage order for beauty shops requires overtime rates to be paid to employees of beauty shops in mercantile establishments for hours over 48 a week.

In other than mercantile establishments 9 hours may be worked on 1 day a week if weekly hours do not exceed 48.

10 hours a day, 60 hours a week, may be worked in canneries between June 1 and October 15.

Overtime allowed for a period of 48 hours in public emergencies in employments necessary to furnish essential public services such as communication, sewage disposal, water supply, light, gas, and transportation.

Telegraph or telephone operators may be employed not more than 10 hours between 7:30 p.m. and 8 a.m. if sleeping facilities are provided and operator is allowed at least 4 hours' sleep. See also Wartime Provisions.

Day of Rest.

6-day week established for all employees.

Coverage - Factories (including canneries, bottling plants, laundries and cleaning plants), mercantile establishments, transportation or public service companies, hotels, apartment hotels, restaurants, hospitals, laundries, telephone or telegraph establishments, banking institutions, brokerage businesses, theaters, freight or passenger elevators, or any employers engaged as contractors to furnish labor upon contract to any person, municipality, or county institution, or any office thereof.

Lunch Rooms.

In work rooms where processes produce toxic dusts or fumes that may be conveyed to the human system by the mouth, department of labor regulations forbid eating on the job and require that a suitable place for eating - lunch or locker room - be provided.

Dressing and Rest Rooms.

Department of labor regulations covering workplaces employing labor in production, servicing, storing, handling, transporting, selling, disassembling or wrecking of commodities and materials (except retail store, professional, financial, and office operations other than plant and factory office) provide for rest-, wash-, and locker-room facilities. Separate wash and locker rooms must be provided if there are more than 10 females employed of either sex on a shift. Rest rooms for women are required if more than 5 are employed, except when establishment employs 500 or fewer women and has factory hospital or dispensary. Ratio of lavatories to employees is one for 1 to 15 employees, two for 16 to 30, three for 31 to 50 and one for each additional 25 employees. One cot must be provided if 100 or fewer women are employed and one for each additional 250 women. Specifications as to construction, maintenance, etc., are given in detail.

over

Toilet Rooms.

Separate toilets must be provided for each sex and clearly designated in establishments (same as for Dressing and Rest Rooms) where more than 5 of either sex are employed. The number of water closets shall be not less than the following:

Toilets	Employees	
	Male	Female
1	1 to 9	1 to 8
2	10 to 24	9 to 20
3	25 to 49	21 to 40
4	50 to 74	41 to 60
5	75 to 99	61 to 80

For over 99 males - 1 for each additional 30 persons.
" " 80 females - 1 " " " " 26 " .

Specifications as to construction, maintenance, etc, are given in detail.

Exemptions - Janitors, watchmen, superintendents, or foremen; employees engaged for not more than 3 hours on Sunday setting sponges in bakeries, caring for live animals, maintaining fires or electrical current, or necessary repairs to boilers, machinery, equipment, or power.

Variations - See Wartime Provisions.

Meal and Rest Periods.

At least 1/2 hour must be given for meals after not more than 5 hours' employment.

Coverage - (Women and minors). Beauty shops.

Night Work - No law.

Plant Facilities

Seating - No law.

Lunch Rooms - No law.

Substituted 2d 5

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No woman or girl of any age ~~to~~ may do any manual labor in or about any mine.

Any city council, board of trustees, or county board shall have power by general ordinance or resolution to prohibit any woman or minor other than a licensee or wife of a licensee from drawing, pouring or mixing any alcoholic liquor, as an employee of a retail licensee.

Industrial Home Work.

Law covers the processing in a home of any article from material furnished by an employer, such article to be returned to him, but not for the personal use of himself or members of his family.

Home work is prohibited on the processing of articles of food or drink, drugs or poisons, medical and surgical dressings, sanitary napkins, and cotton batting; fireworks, explosives, and articles of similar character; toys and dolls; tobacco.

Employer must obtain permit. Fee is $200 the first year. Permit is renewable annually with fees graduated according to number of workers and is limited to a specified industry or trade. Home worker must have an annual certificate for which there is no fee. Worker's permit is issued only to person at least 16 years of age, living in his own home, and free from communicable disease. Owner of premises where home work is done must obtain a sanitary permit, renewable annually (no fee). Owner must keep on the premises an accurate register of all persons engaged on industrial home work. Employer must report semiannually the names and addresses of his workers.

Under minimum fair wage standards directory order, home work for any employer in the wash-dress industry by women and minors must be paid the specified minimum rates, with overtime beyond a 40-hour week paid for at 1+1/10 times regular hourly rates. Employer must keep accurate record of each home worker, as to hours worked and wages paid.

Maternity Leave - No law.

Wartime Provisions

During World War II, labor director on application showing wartime necessity may grant emergency permits authorizing employment of females in war work up to 10 hours a day, 54 hours a week, for as much as 10 weeks in a year.

Emergency permits also may be granted allowing employment of persons in war work on 7 days a week for 2 consecutive weeks, but not more than 8 weeks in year.

Minimum Wage

Authority.

Department of labor issues orders setting minimum wage standards for an occupation, after investigation and recommendation by a wage board.

Coverage.

(1) Employees - Women; minors.

(2) Industries or Occupations - Any, except domestic service and farm labor.

Orders.

Macaroni, etc. (Directory) ~~Effective February~~ 11, 1935
Laundry (Mandatory) ~~Effective August~~ 2, 1937
Wash Dress (Directory) ~~Effective~~ May 1, 1938
Confectionery (Directory) ~~Effective~~ June 1, 1939
Beauty culture (Mandatory, revised) ~~Effective~~ March 24, 1941

Minimum Wage

C. Carriers Act Feb 4th

Carriers ①

employers of 6 or more persons engaged in the manufacture of articles.

Sale or purchase.

Lockout ② to prevent discrimination on the ground of age in the payment of wages for equal work

Strike ③ ~~Act~~ based on age, sex, nationality, race, colour, creed, marriage, civil liability, difference in duties or services performed (regularly or occasionally), difference in qualifications, ~~or~~ other operations, ~~or~~ refusal to submit to an increase in wages ~~or~~ ~~or~~ unreasonable hardship ~~or~~ difference in sex, ~~or~~ where ~~[illegible]~~ is authorized by a

Declared a misdemeanor ④ subject to prescribed penalties ⑤.

Effective date - June 1, 1942.

SUMMARY - BY STATES

ILLINOIS

Hours of Work

Daily - 8 hours.

Weekly - 48 hours.

Coverage (Females 16 and over) Mechanical or mercantile establishments, factories, laundries, hotels, restaurants, barber shops, beauty parlors, telegraph or telephone establishments or offices thereof, places of amusement, express or transportation or public utility business, common carrier, public or private institutions or offices thereof.

Exemptions - Graduate nurses, operators for a telephone company in an agency in a private residence or place of business other than an exclusive telephone establishment.

Variations - In mercantile establishments, 9 hours a day, 54 hours a week may be worked during 4 weeks in calendar year. The minimum wage order for beauty shops requires ~~time and a half~~ be paid to employees of beauty shops in mercantile establishments for hours over 48 a week.

In other than mercantile establishments 9 hours may be worked on 1 day a week if weekly hours do not exceed 48.

10 hours a day, 60 hours a week may be worked in canneries between June 1 and October 15.

Overtime allowed for a period of 48 hours in public emergencies in employments necessary to furnish essential public services such as communication, sewage disposal, water supply, light, gas, and transportation.

Telegraph or telephone operators may be employed not more than 10 hours between 7:30 p.m. and 8 a.m. if sleeping facilities are provided and operator is allowed at least 4 hours' sleep.

See also Wartime Provisions.

Day of Rest - 6-day week established for all employees)

Coverage - Factories (including canneries, bottling plants, laundries and cleaning plants), mercantile establishments, transportation or public service companies, hotels, apartment hotels, restaurants, hospitals, laundries, telephone or telegraph establishments, banking institutions, brokerage businesses, theaters, freight or passenger elevators, or any employers engaged as contractors to furnish labor upon contract to any person, municipality, or county institution, or any office thereof.

Exemptions - Janitors, watchmen, superintendents, or foremen; employees engaged for not more than 3 hours on Sunday setting sponges in bakeries, caring for live animals, maintaining fires or electrical current, or necessary repairs to boilers, machinery, equipment, or power.

See also Wartime Provisions.

Meal and Rest Periods - (At least ½ hour must be given for meals after not more than 5 hours' work.)

Coverage (Women and minors)

Night Work - No law.

Plant Facilities

Seating - No law.

Lunchrooms - No law.

Dressing and Rest Rooms - No law.

Toilets - No law.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No woman or girl of any age shall do any manual labor in or about any mine.

Any city council, board of trustees, or county board shall have power by general ordinance or resolution to prohibit any woman or minor other than a licensee or wife of a licensee from drawing, pouring or mixing any alcoholic liquor, as an employee of a retail licensee.

Industrial Home Work -

Covers the processing in a home of any article from material furnished by an employer, such article to be returned to him, but not for the personal use of himself or members of his family.

Prohibit the processing of articles of food or drink, drugs or poisons, medical and surgical dressings, sanitary napkins, and cotton batting; fireworks, explosives, and articles of similar character; toys and dolls; tobacco.

Employer must obtain permit. Fee, $200. Renewable annually with graduated scale according to number of workers. Limited to a specified industry or trade. Homeworker must have annual certificate. No fee. Issued only to person at least 16 years of age, living in his own home, and free from communicable disease. Owner of premises where homework is done must obtain a sanitary permit, renewable annually. No fee. Owner must keep on the premises an accurate register of all persons engaged on industrial homework. Employer must report semi-annually the names and addresses of his workers.

Under minimum fair wage standards directory order, homeworkers for any employer in the wash dress industry by women and minors must be paid specified rates, with overtime beyond a 40-hour week paid for at 1-1/10 times regular hourly rates. Employer must keep accurate record of each homeworker, as to hours worked and wages paid.

Maternity Leave - No law.

Wartime Provisions - During World War II, labor director, on application showing wartime necessity, may grant emergency permits authorising employment of females in war work up to 10 hours a day, 54 hours a week for as much as 10 weeks in a year.

Emergency permits also may be granted allowing employment of persons in war work on 7 days a week for 2 consecutive weeks, but not more than 8 weeks in year.

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

INDIANA

Hours of Work

Daily - No law.

Weekly - No law.

Day of Rest - No law.

Meal and Rest Periods.

Not less than 1 hour allowed for noon-day meal.

Coverage - (All employees). Manufacturing or mercantile establishment, mine, quarry, laundry, renovating works, bakery, or printing office.

Variations - In special cases and for good cause shown, the chief labor inspector may permit a shorter time.

Night Work.

Prohibited for the period of 10 p.m. to 6 a.m.

Coverage - (Females 18 and over). Manufacturing establishments.

Variations - Night work prohibited for period 12 midnight to 6 a.m. for manufacturing establishments operating 2 shifts of not more than 8 hours each and not more than 5 days a week.
See Wartime Provisions.

Plant Facilities

Seating.

Manufacturing or mercantile establishments, mines, quarries, laundries, renovating works, bakeries, or printing offices must provide for each female employee a suitable seat placed conveniently where employee works. Use of seat must be allowed when employee is not necessarily engaged in active duties of employment.

A general statute provides that every person or corporation employing women in any business must provide suitable seats for them and permit the women to use the seats when not on active duties of employment.

Lunch Rooms - No law.

Dressing and Rest Rooms.

When required by the chief inspector, a dressing room must be provided for female employees in any of the establishments listed under Seating.

Toilet Rooms.

Suitable and proper water closets, properly screened and ventilated, must be provided in the ratio of 1 seat for every 25 persons, and 1 seat for each fraction thereof above 10 in establishments listed under Seating.

If females are employed, water closets for their use must be separate and apart from those used by men, and have separate approaches.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female of any age shall be permitted to enter a coal mine for the purpose of employment therein.

No boy or girl under the age of 21 years shall be permitted to work in any public pool or billiard room.

Industrial Home Work.

The law regulats the manufacture of coats, vests, trousers, knee-pants, overalls, cloaks, furs, fur trimmings, fur garments, shirts, purses, feathers, artificial flowers, or cigars, for sale, in any room or rooms, apartment or apartments, in any tenement or dwelling house, by the immediate members of the family living therein.

Employer must have permit from the safety inspector, granted only after official inspection and approval of the premises. Electric lighting and sufficient ventilation required.

Maternity Leave. - No law.

Wartime Provisions

For the duration of present war (also retroactive to Dec. 7, 1941), or of a war contract, whichever may be longer, an industry filing written notice with the labor commissioner may employ women 18 years of age and over at night.

Minimum Wage

No law.

SUMMARY - HOURS OF WORK

IDAHO

Hours of Work - No law.

Day of Rest - No law.

Meal and Rest Periods - Not less than 1 hour allowed for noon-day meal.

Coverage (All employees) - Manufacturing or mercantile establishment, mine, quarry, laundry, renovating works, bakery, or printing office.

Variations - In special cases and for good cause shown, the chief labor inspector may permit a shorter time.

Night Work - Prohibited for the period of 10 p.m. to 6 a.m.

Coverage (Females 18 and over) Manufacturing establishments.

Variations - Night work prohibited for period 12 midnight to 6 a.m. for manufacturing establishments operating 2 shifts of not more than 8 hours each and not more than 5 days a week.

Plant Facilities

Seating - Manufacturing or mercantile establishments, mines, quarries, laundries, renovating works, bakeries, or printing offices must provide for each female employee a suitable seat placed conveniently where employee works. Use of seat must be allowed when employee not necessarily engaged in active duties of employment.

A general statute provides that every person or corporation employing women in any business must provide suitable seats for them and permit the women to use the seats when not on active duties of employment.

Lunchrooms - No law.

Dressing and Restrooms - When required by the chief inspector, a dressing room must be provided for female employees in any of the establishments listed under Seating above.

Toilets - Suitable and proper water closets, properly screened and ventilated, must be provided in the ratio of 1 seat for every 25 persons, and 1 seat for each fraction thereof above 10.

If females are employed, water closets for their use must be separate and apart from those used by men, and have separate approaches.

Coverage - See Seating above.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female of any age shall be permitted to enter a coal mine for the purpose of employment therein.

No boy or girl under the age of 21 years shall be permitted to work in any public pool or billiard room.

Industrial Homework -

Law regulates the manufacture of coats, vests, trousers, knee-pants, overalls, cloaks, furs, fur trimmings, fur garments, shirts, purses, feathers, artificial flowers, or cigars, for sale, in any room or rooms, apartment or apartments, in any tenement or dwelling house, by the immediate members of the family living therein.

Employer must have permit from the safety inspector, granted only after official inspection and approval of the premises. Electric lighting and sufficient ventilation required.

Maternity Leave - No law.

Wartime Provisions - For the duration of present war (also retroactive to Dec. 7, 1941), or of a war contract, whichever may be longer, an industry filing written notice with the labor commissioner may employ women 18 years and over at night.

Women's Bureau
Department of Labor
Washington

January 1935

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 16 years of age and over, together with the occupational coverage.

IOWA

Hours of Work

Daily - No law.

Weekly - No law.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Workshop, mercantile or manufacturing businesses or establishments must provide suitable seats for female employees. Seats are to be located at or beside counter or workbench where women work, and use of seats to be permitted to such extent as work may reasonably admit.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Factories, mercantile establishments, mills, or workshops must provide a dressing room or rooms, with lockers for keeping clothing, also adequate washing facilities, separate for each sex, for employees on jobs that require change of clothing.

Toilet Rooms.

Manufacturing or mercantile establishments, workshops or hotels, employing 5 or more persons, must provide, for reasonable use of employees, water closets in the ratio of at least 1 to every 20 employees. Where females are employed, separate water closets for each sex must be provided.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female under 21 years of age may be employed in any capacity that compels constant standing.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY - BY STATES

IOWA

Hours of Work - No law.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Workshop, mercantile or manufacturing businesses or establishments must provide suitable seats for female employees. Seats are to be located at or beside counter or workbench where women work, and use of seats to be permitted to such extent as work may reasonably admit.

Lunchrooms - No law.

Dressing and Restrooms - Factories, mercantile establishments, mills, or workshops must provide a dressing room or rooms, with lockers for keeping clothing, also adequate washing facilities, separate for each sex, for employees on jobs that require change of clothing.

Toilets - Manufacturing or mercantile establishments, workshops or hotels, employing 5 or more persons, must provide for reasonable use of employees a ~~sufficient number of~~ water closets in the ratio of ~~Ratio~~ At least 1 to every 20 employees. Where females are employed, separate water closets for each sex must be provided.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female under 21 years of age ~~to~~ may be employed in any capacity that compels constant standing.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - None.

Women's Bureau
Department of Labor
Washington

~~January~~ 1/, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

KANSAS

Hours of Work

(1) Daily - 8 hours. (Maximum)
Weekly - 48 hours.

Coverage - (Women; minors). Public housekeeping occupations; employees other than operators in telephone exchange or office.

Exemptions - Small telephone exchanges requiring not more than two operators on duty at one time; exchanges in residences operated by members of the household.

Variations - Longer hours permitted telephone exchanges in emergencies if and when restrictions would result in interruption or impairment of service to the public.

(2) Daily - 8 hours. (Maximum)
Weekly - No law.

Coverage - (Women; minors). Telephone exchanges or offices - Operators.

(3) Daily - 9 hours. (Maximum)
Weekly - 49½ hours.

Coverage - (Women; minors). Manufacturing and laundry occupations.

Variations - 4½ hours' overtime a week allowed manufacturing establishments in case of emergency.

In seasonal industries handling perishable food products, such as canneries, creameries, condenseries, and poultry houses, the full amount of overtime is allowed for 6 weeks during their peak season or for 2 periods a year not to exceed 3 weeks each.

Cream testers may work 6½ days a week between May 1 and September 1, if weekly hours do not exceed 54.

In a poultry dressing and packing business, during the season from October 15 to December 24, 11 hours a day and 58 hours a week are permitted for 4 of the 6 weeks' peak season and 11 hours a day and 60 hours a week for the remaining 2 weeks, provided 1 of these latter weeks falls between November 1 and Thanksgiving Day and the other between Thanksgiving Day and Christmas.

Millinery workrooms, dressmaking establishments, hemstitching and button shops, and the alteration, drapery, and upholstery departments of mercantile establishments may obtain permission from the women's division of the labor department to operate under the mercantile hour standards.

See also Wartime Provisions.

Laundry establishments are allowed overtime of 2½ hours a week ~~allowed~~ but daily hours may not be exceeded.

(4) Daily - 9 hours. (Maximum)
Weekly - 54 hours.

Coverage - (Women and minors). Mercantile Occupations.

Exemption - Regularly registered pharmacists.

Variations - 10-hour working day allowed once a week, but maximum weekly hours may not be exceeded.

Day of Rest.

(Women and minors). 6-day week established for manufacturing occupations and mercantile occupations. See Hours of Work law for variations. (Daily and Weekly?) (3) and (4)

Meal and Rest Periods.

(1) Laundry Occupations - One hour meal period must be given female employees after 6 consecutive hours of employment, unless official permit obtained for ½-hour period on request of both employer and employees.

(2) Manufacturing - At least 3/4-hour lunch period required for women and minors after 5 consecutive hours' work. But lunch period may be shortened by official permit to not less than ½ hour in an industry operating on an 8-hour basis.

(3) Mercantile - One hour meal period required for women and minors after 5 consecutive hours' employment. However, on the joint request of employer and employees, official permit may be obtained for a 3/4-hour meal period.

(4) Public housekeeping - At least 1/3 hour for meal period must be allowed women and minors after 5 consecutive hours' employment.

(5) Telephone exchanges or offices - Day operators (women; minors) are to work in two shifts or "tours", one of which shall not exceed 5 hours.

Night Work.

(1) (Women and minors). Employment prohibited between 9 p.m. and 6 a.m. in laundry and manufacturing occupations.

(2) (Women and minors). Employment prohibited after 9 p.m. in mercantile establishments. However, the women's division of the department of labor may permit such establishments in agricultural communities to stay open until 10 p.m. on one day a week during a specified number of weeks between June 1 and September 15.

(3) (Women under 21). Employment prohibited between 12 midnight and 5 a.m. in public housekeeping occupations.

(4) (Women and minors). In telephone exchanges or offices regular employment of operators after 11 p.m. (that is, work time plus rest and sleep time,) must be performed within 12 hours.

Plant Facilities

Seating.

Mercantile establishments, stores, shops, hotels, restaurants, or other places where women are employed as clerks or help, must provide chairs, stools, or other contrivances for the comfortable use of female employees. Use must be permitted when employee is not actively engaged in the discharge of duties.

Laundries are required to supply a "sufficient number" of suitable seats, and allow their use by women employees even when operating machines or engaged in other duties, as far as practicable.

Manufacturing establishments must provide a suitable seat for each woman employee; seat to have back and foot rests broad and firm enough to be convenient while working, and use to be encouraged.

Lunch Rooms.

Manufacturing establishments are required to make provision for workers to eat their meals outside the workroom in a clean, comfortable place.

Dressing and Rest Rooms.

Must be provided for women employees in laundry, mercantile, and manufacturing establishments, to permit change of clothing and care of clothing outside workroom.

A cot must be provided in an accessible place for women employees in laundry and mercantile establishments.

Toilet Rooms.

Laundry establishments must provide separate toilets for each sex, plainly designated, unless plant location makes separate toilets impracticable or impossible, when the department of labor may make requirements as to suitable provisions.

Manufacturing and mercantile establishments must provide one toilet to every 20 female employees or fraction of that number. Suitable and convenient toilets, separate for each sex, are required.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No specific law. But the State labor department reports that it issues permits for women's employment in war production beyond the hours established by the Industrial Welfare order for manufacturing establishments, under authority granted to it by the Legislature to establish reasonable standards for wages, hours, and conditions of labor for women that are not detrimental to their health and welfare.

Minimum Wage

Authority.

Commissioner of labor issues mandatory order for occupation after investigation and public hearing.

Coverage.

(1) Employees - women, minors.

(2) Industries or occupations - Any occupation.

Orders.

None.

SUMMARY - BY STATES

KANSAS

Hours of Work

(A)

A. Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Women; minors)

(1) Public housekeeping occupations; that is, the work of waitresses in restaurants, hotel dining rooms, and boarding houses; attendants in ice-cream parlors, soda fountains, light-lunch stands; steam-table or counter work in cafeterias and delicatessens where freshly cooked foods are served; confectionery stores where lunches are served; chambermaids in hotels, lodging and boarding houses, and hospitals; janitresses; car cleaners; kitchen workers in hotels, restaurants, and hospitals; women elevator operators and cigar-stand and cashier girls connected with such establishments.

(2) Telephone exchange or office employees other than operators

KANSAS

Exemptions - Small telephone exchanges requiring not more than two operators on duty at one time; exchanges in residences operated by members of the household.

Variations - Longer hours permitted in emergencies if and when restrictions would result in interruption or impairment of service to the public.

(B)

Daily - 8 hours.

Weekly - No law.

Coverage - Telephone exchanges or offices of Operators.

(C)

Daily - 9 hours.

Weekly - 49½ hours.

Coverage - Manufacturing occupations, ~~that is, all processes~~ in the production of commodities including work in florists' shops and candy-making departments of confectionery stores ~~and bakeries~~.

Variations - 4½ hours' overtime a week allowed in case of emergency.

In seasonal industries handling perishable food products, such as canneries, creameries, condenseries, and poultry houses, the full amount of overtime is allowed for 6 weeks

during their peak season or for 2 periods a year not to exceed 3 weeks each.

In a poultry dressing and packing business, during the season from Oct. 15 to Dec. 24, 11 hours a day and 58 hours a week are permitted for 4 of the 6 weeks' peak season and 11 hours a day and 60 hours a week for the remaining 2 weeks, provided 1 of these latter weeks falls between Nov. 1 and Thanksgiving Day and the other between Thanksgiving Day and Christmas.

Millinery workrooms, dressmaking establishments, hemstitching and button shops, and the alteration, drapery, and upholstery departments of mercantile establishments may obtain permission from the women's division of the labor department to operate under the mercantile hour standards.

~~I. - Daily - 9 hours.~~

~~Weekly - 49½ hours.~~

~~2. Coverage - Laundry occupations, that is, work in laundry, dyeing, dry cleaning, and pressing establishments.~~

~~Variations - Overtime of 2½ hours a week allowed but daily hours may not be exceeded.~~

~~II.~~ Daily - 9 hours.

Weekly - 54 hours.

Coverage - Mercantile occupations, ~~that is, work in establishments~~ operated for the purpose of trade in the purchase or sale of goods or merchandise, including the sales force, wrapping employees, auditing and checking force, shippers in the mail-order department, receiving, marking and stockroom employees, sheet-music

saleswomen and demonstrators, and all employees in such establishments in any way directly connected with the sale, purchase, and disposition of goods, wares, and merchandise.

Exemption - Regularly registered pharmacists.

Variations - 10-hour working day allowed once a week, but maximum weekly hours may not be exceeded.

Day of Rest - 6-day week established for manufacturing occupations, mercantile occupations, and telephone employees other than operators. See Hours of Work section above for detailed coverage and variations.

Night Work - 1. Prohibited for the period 9 p.m. to 6 a.m. in Laundry and Manufacturing Occupations. (Women and minors)

2. Prohibited after 9 p.m. in Mercantile establishments. However, the women's division of the Department of Labor may permit such establishments in agricultural communities to stay open until 10 p.m. on one day a week during a specified number of weeks between June 1 and September 15. (Women and minors)

3. Prohibited for period 12 midnight to 5 a.m. for women employees under 21 years of age in Public Housekeeping occupations. (Women under 21)

4. In Telephone exchanges or offices regular employment of operators after 11 p.m. (that is, work time plus rest and sleep time) must be performed within 12 hours. (Women and minors)

~~See Hours of Work section for detailed coverage~~

Plant Facilities -

Seating - Mercantile establishments, stores, shops, hotels, restaurants, ~~stores, shops, hotels, restaurants,~~ or other places where women are employed as clerks or help, must provide chairs, stools, or other contrivances for the comfortable use of female employees. Use to be

~~Insert~~
Kansas (p. 4)

4a

~~Meal and Rest Periods~~ ~~Forbidden except as to hours of work allowed~~

~~(1)~~ Laundry occupations — One hour meal period must be given after 6 consecutive hours of employment, unless official permit obtained for ½ hour period on request of both employer and employees.

~~(2)~~ Manufacturing — At least 30 minutes for women and minors lunch period required after 5 consecutive hours' work. But lunch period may be shortened by official permit to not less than ½ hour in an industry operating on an 8-hour basis.

(3) ~~Mercantile~~ — One hour meal period required for women and minors after 5 consecutive hours' employment. However, on the joint request of employer and employees, official permit may be obtained for a ½-hour meal period.

(4) Public housekeeping — at least ½ hour per meal period must be allowed women and minors after 5 consecutive hours employment.

(5) ~~Telephone exchanges or offices~~ — Day operators are to work in two shifts or "tours", one of which shall not exceed 5 hours.

~~See Hours of Work section for detailed average.~~

permitted when employee is not actively engaged in the discharge of duties.

Laundries are required to supply a "sufficient number" of suitable seats, and allow their use by women employees even when operating machines or engaged in other duties, as far as practicable.

Manufacturing establishments must provide a suitable seat for each woman employee, ~~seat~~ to have back and foot rests broad and firm enough to be convenient while working.

~~See "Hours of Work" section for detailed coverage.~~

Lunchrooms - Manufacturing establishments ~~(See "Hours of Work" for coverage)~~ are required to make provision for workers to eat their meals outside the workroom in a clean, comfortable place.

Dressing and Rest Rooms - Must be provided for women employees in Laundry, Mercantile, and Manufacturing establishments, to permit change of clothing and care of clothing outside workroom.

A cot must be provided in an accessible place for women employees in Laundry and Mercantile establishments.

Toilets - Laundry establishments must provide separate toilets for each sex, plainly designated, ~~unless~~

~~Variation - If~~ plant location makes separate toilets impracticable or impossible, the Department of Labor may make requirements as to suitable provisions.

Manufacturing and Mercantile establishments must provide one toilet to every 20 female employees or fraction of that number. Suitable and convenient toilets, separate for each sex, are required.

~~See "Hours of Work" for detailed coverage.~~

Weight Lifting and Other Conditions of Work - No specific law.

Prohibited Occupations - No specific law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions - No law.

2

MW Laws

Kansas

Kansas

Authority ① Commissioner of labor issues mandatory order for occupation after investigation ② public hearing.

atta. issues mandatory order for

Coverage ①

(1) Employees — women, minors.

(2) Industries or occupations — Any occupation.

Orders ①

None.

Kansas

Authority — Labor Commissioner of ... after investigation ... and public hearing ... occupation ... and ... public hearing, ... issue mandatory order for ...

Coverage

1) Employees — women, minors.

2) Industries or occupations — Any occupation.

Orders

None.

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

(Females 16 and under 21). Any occupation except domestic service, nursing.

Variations - All industries and occupations are required to pay time and a half for hours worked in excess of 48 in Zone 1, 50 in Zone 2, 52 in Zone 3, except farm labor, domestic service, establishments regulated by Kentucky Public Service Commission, or employment under any special State wage order.

Laundry, dry-cleaning, and dyeing establishments are required to pay time and a half for hours worked in excess of 44 in Zones 1 and 2, 48 in Zones 3 and 4.

Hotel and restaurant industries (hotel: establishment having more than 10 guest rooms, which offers lodging accommodations for hire to the general public and has transient guests; restaurant: establishment which prepares and offers for sale food for consumption) are required to pay time and a half for hours worked in excess of 48 in Zones 1 and 2, 50 in Zone 3, 52 in Zone 4.

Day of Rest.

No specific provision. However, law requires that time and a half be paid employees for work done on the 7th day.

Exemptions - Employees on workweek of 40 hours or less; small telephone exchanges; clerical or technical assistants of professionals; employees subject to Federal Railway Labor Act, seamen; operators of boats; common carriers; persons icing railroad cars.

Meal and Rest Periods.

(Women and minors 16 and over). At least ½-hour rest period required after 6 consecutive hours of work for all industries and occupations, including hotels and restaurants.

Hotels and restaurants allowing rest periods of 5 or 10 minutes each at employer's expense, totaling ½ hour for each shift, considered as complying with the law.

Variations - Laundry, dry-cleaning, and dyeing establishments required to allow ½-hour rest period after 5 hours' consecutive work.

(~~Persons under 21~~).

KENTUCKY

Hours of Work

Daily - 10 hours.

Weekly - 60 hours.

Coverage - (Females 21 and over). Laundries, bakeries, factories, workshops (including beauty parlors), stores, mercantile, manufacturing, or mechanical establishments, hotels, restaurants, telephone exchanges, or telegraph offices.

(Females 16 and under 21). Any occupation except domestic service, nursing.

Variations - All industries and occupations are required to pay time and a half for hours worked in excess of 48 in Zone 1, 50 in Zone 2, 52 in Zone 3, except farm labor, domestic service, establishments regulated by Kentucky Public Service Commission, or employment under any special State wage order.

Laundry, dry-cleaning, and dyeing establishments are required to pay time and a half for hours worked in excess of 44 in Zones 1 and 2, 48 in Zones 3 and 4.

Hotel and restaurant industries (hotel: establishment having more than 10 guest rooms, which offers lodging accommodations for hire to the general public and has transient guests; restaurant: establishment which prepares and offers for sale food for consumption) are required to pay time and a half for hours worked in excess of 48 in Zones 1 and 2, 50 in Zone 3, 52 in Zone 4.

Day of Rest.

No specific provision. However, law requires that time and a half be paid employees for work done on the 7th day.

Exemptions - Employees on workweek of 40 hours or less; small telephone exchanges; clerical or technical assistants of professionals; employees subject to Federal Railway Labor Act, seamen; operators of boats; common carriers; persons icing railroad cars.

Meal and Rest Periods.

(Women and minors 16 and over). At least ½-hour rest period required after 6 consecutive hours of work for all industries and occupations, including hotels and restaurants.

Hotels and restaurants allowing rest periods of 5 or 10 minutes each at employer's expense, totaling ½ hour for each shift, considered as complying with the law.

Variations - Laundry, dry-cleaning, and dyeing establishments required to allow ½-hour rest period after 5 hours' consecutive work.

(~~Persons under 21~~).

Night Work.

(Persons under 21). Employment as messengers for telegraph, telephone, or messenger companies in cities of first, second, or third class prohibited between the hours of 9 p.m. and 6 a.m.

Plant Facilities

Seating.

Every employer of females must provide seats for them in the workroom and permit the employees to use the seats when not engaged in their active duties. Folding type seats not considered a compliance with the law. At least 1 seat for every 3 female employees must be supplied in stores and mercantile establishments.

Lunch Rooms. No law.

Dressing and Rest Rooms.

Every employer of females must provide a dressing room for them if the nature of the work requires a change of clothing.

Toilet Rooms.

Every employer of females must provide suitable water closets and wash rooms. Privy closets permitted if sewer connection impossible. Establishments employing men and women must provide entirely separate toilet rooms for each sex, with separate entrances.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female under 21 years of age may be employed or permitted to work at any occupation that compels her to remain standing constantly.

No licensee for the sale of alcoholic beverages at retail for consumption on the premises shall employ any female for any duties with respect to the sale of these beverages, except as waitresses, cashiers, ushers.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

Authority.

Commissioner of industrial relations issues orders after final approval of recommendations of a wage-board as to minimum rate for occupation.

Coverage.

(1) Employees - Women, minors.

(2) Industries or Occupations - Any occupation, except domestic service, farm labor, employment regulated by the State public service commission.

Orders Issued

All industries and occupations, except those under special orders or excluded by statute. (Mandatory) Effective June 1, 1939.

Laundry, dry cleaning, dyeing (Mandatory) - Effective April 1, 1942.
Hotel and restaurant (Mandatory) - Effective April 1, 1943.

~~GENERAL - ALL STATES~~

~~KENTUCKY~~

Hours of Work

Daily - 10 hours.

Weekly - 60 hours.

Coverage - Group 1 - (Females 21 and over) Laundries, bakeries, factories, workshops (including beauty parlors), stores, mercantile, manufacturing, or mechanical establishments, hotels, restaurants, telephone exchanges, or telegraph offices.

Group 2:- (Females 16 and under 21) Any occupation.

Exemptions - Domestic service, nursing.

Variations (Groups 1 and 2):

(1) All industries and occupations required to pay ~~1½ overtime rates~~ time and a half for hours worked in excess of:

48 in Zone 1,

50 in Zone 2,

52 in Zone 3,

Except farm labor, domestic service, establishments regulated by Kentucky Public Service Commission, employment under any special State wage order. (See Chart I for details on coverage.)

(2) Laundry, dry-cleaning and dyeing establishments required to pay time and a half ~~1½ overtime rates~~ for hours worked in excess of:

44 in Zones 1 and 2,

48 in Zones 3 and 4.

(3) Hotel and Restaurant industries: (Hotel: establishment having more than 10 guest rooms, which offers lodging accommodations for hire to the general public and has transient guests, Restaurant: establishment which prepares and offers for sale food for consumption,) required to pay time and a half ~~1½ overtime rates~~ for hours worked in excess of:

48 in Zones 1 and 2,

50 in Zone 3,

52 in Zone 4.

Day of Rest - No specific provision. However, ~~overtime rates of 1½~~ required for work done on the 7th day.

Exemptions: Employees on workweek of 40 hours or less; small telephone exchanges; clerical or technical assistants of professionals; employees subject to Federal Railway Labor Act; seamen; operators of boats; common carriers; persons icing railroad cars.

~~Meal or~~ Rest Periods - (Women and minors)

At least ½-hour rest period required after 6 consecutive hours of work for all industries and occupations, including hotels and restaurants.

Hotels and restaurants allowing rest periods of 5 or 10 minutes each at employer's expense, totalling ½ hour for each shift, considered as complying with the law.

Variations - Laundry, dry-cleaning and dyeing establishments required to allow ½ hour rest period after 5 hours' consecutive work.

Night Work - ~~Prohibited~~ persons under 21 between the hours of 9 p.m. to 6 a.m., employed as messengers for telegraph, telephone, or messenger companies in cities of first, second, or third class.

Plant Facilities

Seating - Every employer of females ~~in stores and mercantile establishments~~ must provide, in the workroom ~~at least 1 seat for every 3 female employees~~, and permit ~~them~~ to use the seats when not engaged in their active duties. Folding type seats not considered a compliance with the law.

Lunchrooms - No law.

Dressing and Restrooms - Every employer of females must provide a dressing room for them if the nature of the work requires a change of clothing.

Toilet Rooms - Every employer of females must provide suitable water closets and wash rooms. Privy closets permitted if sewer connection impossible. Establishments employing men and women must provide entirely separate toilet rooms for each sex, with separate entrances.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female under 21 years of age may be employed or permitted to work at any occupation that compels her to remain standing constantly.

No license for the sale of alcoholic beverages at retail for consumption on the premises shall employ any female for any duties with respect to the sale of these beverages, except as Waitresses, cashiers, ushers.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - No law.

new page - 3

Minimum Wage

Authority — Commissioner of Industrial Relations may make orders establishing minimum wages by occupations.

Coverage —

Exceptions — [illegible]

Inapplicable occupations — Any occupation not domestic service, farm labor, employment regulated by the State Public Service Commission.

Effective April 1, 1942

Effective April 1, 1943

Effective June 1, 1943

All minors are employed in occupations except those under special orders or excluded by statute. (Mandatory)

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

LOUISIANA

Hours of Work

(1) Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females 18 and over). Manufacturing, mechanical (by interpretation, includes beauty shops), or mercantile establishments, laundries, hotels, theaters, restaurants, telegraph or telephone establishments, transportation companies, or operators of freight or passenger elevators.

Exemptions - Agricultural pursuits; domestic service; processing, packing and canning of fish, sea food, fruits, and vegetables; fishing industries; processing of sugar cane or sorghum into sugar, molasses, or syrup; office and clerical work except when such work is performed for laundries, hotels, or restaurants; towns or villages of less than 6,000 population.

Variations - See Wartime provisions.

(2) Daily - 9 hours.
Weekly - 54 hours.

Coverage - (Females 18 and over). Mines, packing houses, places of amusement where intoxicating liquors are made or sold, bowling alleys, bootblack establishments; the distribution of merchandise, or any other occupation not covered by 1942 legislation on women's hours of work. (See Daily and Weekly hours of work (1).)

Exemptions - Processing of sugar cane or sorghum into sugar, molasses, or syrup.

Variations - 10-hour day, 60-hour week, permitted during emergencies in packing plants, canning plants, and factories handling fruits, sea foods, vegetables, and perishable foods.

See also Wartime Provisions.

Day of Rest.

6-day week established for employees and employments covered by the Hours of Work (1).

Meal and Rest Periods.

(1) At least ½-hour interval must be allowed after 6 consecutive hours of work.

Coverage - Employees and employments covered by Hours of Work (1).

Establishments employing fewer than 3 females are exempt from this lunch period provision.

Variations - 6½ consecutive hours may be worked if employment ends immediately thereafter and the worker is dismissed for the day.

See also Wartime Provisions.

(2) At least ½ hour between 10 a. m. and 3 p. m. must be allowed each day for lunch or recreation.

Coverage - (Females). Retail businesses employing female labor or female clerks.

Variations - See Wartime Provisions.

(3) At least 1 hour between 10 a. m. and 3 p. m. must be allowed for the midday meal, lunch, or recreation.

Coverage - (All clerks). Retail business in cities of more than 50,000 inhabitants.

Variations - See Wartime Provisions.

(4) At least ½-hour must be allowed for dinner.

Coverage - Employees and employments covered by Hours of Work (2).

Variations - See Wartime Provisions.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats (at least 1 for every 3 females), accessible to employees, must be provided by factories, mills, warehouses, manufacturing establishments, workshops, stores, or employers in any other occupations or establishments covered by reference in Act, No. 207, 1934 Laws.

Retail businesses that employ female labor or female clerks must maintain seats for these employees.

Each of the foregoing groups of employers must permit the female employees to use the seats when employees are not necessarily engaged in their active duties.

Proper seating or resting accommodations must be provided for female operators on elevators used for carrying persons, goods, wares, or merchandise in any place of business.

Lunch Rooms - No law.

Insurance

Sept, 1945

Dressing and Rest Rooms.

Proper wash and dressing rooms must be supplied for female employees, in factories, mills, manufacturing establishments, workshops, warehouses, mercantile establishments or stores, and all other occupations and establishments hereinabove mentioned in which 5 or more young persons or women are employed, and every such institution in which 2 or more children, young persons, or women are employed.

Toilet Rooms.

A sufficient number of water closets (at least 1 for each 25 employees), reasonably accessible to employees, must be supplied by employers in establishments listed under Dressing and Rest Rooms.

If two or more persons and one or more females are employed, a sufficient number of water closets must be provided for each sex. Separate accommodations must be plainly designated for each sex. Closets not to be locked during working hours.

~~Weight~~

Other Regulations

Weight Lifting and Other Conditions of Work.

No woman or minor employed in a factory, mill, or workshop may be required to clean any part of the mill, gearing, or machinery while it is in motion.

Prohibited Occupations.

No female may be employed in any concert hall or saloon where spirituous liquors, wines, or malt are sold at retail, to distribute, sell, or take orders for such liquors, wines, or malt among the audience or frequenters of such hall or saloon.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

For duration of the present war and 60 days thereafter, 10 hours a day permitted if time and a half is paid for hours over 8. Weekly maximum (48 hours, 6 days) not to be exceeded. [Applicable to establishments and occupations listed under Daily and Weekly hours of work (1).]

Notwithstanding any provision of law to the contrary, the labor commissioner is authorized under the State's 'War Emergency Dispensation Act' to grant dispensations to employers in war work, when and if investigation shows that peace-time provisions of the labor laws interfere with maximum possible operation in war work.

Enclosure

June, 945

Employment of women on the seventh day or for hours longer than the maximum fixed by statute must be paid for at time and a half.

Certain conditions must be met before application is approved. Women's health and welfare must be safeguarded.

"War work" is defined as (1) work in producing articles or materials on or for contracts for the Army, Navy, or other agency of the United States or an associated power of the United States; or (2) work in performing other services related to and necessary for successful waging of the present war.

Minimum Wage

Authority.

Commissioner of Labor issues mandatory order on final approval of report to investigate wage conditions in the occupation.

Coverage.

(1) Employees - Women and girls.

(2) Industries or Occupations - Any, except farm labor, domestic service, and municipalities of 10,000 or less population.

Orders.

None.

SUMMARY - BY STATES

LOUISIANA

Hours of work

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 18 and over) Manufacturing, mechanical (by interpretation, includes beauty shops), or mercantile establishments, laundries, hotels, theaters, restaurants, telegraph or telephone establishments, transportation companies, or operators of freight or passenger elevators.

Exemptions - Agricultural pursuits; domestic service; processing, packing and canning of fish, sea food, fruits, and vegetables; fishing industries; processing of sugar cane or sorghum into sugar, molasses, or syrup; office and clerical work except when such work is performed for laundries, hotels, or restaurants; towns or villages of less than 6,000 population.

Variations - See Wartime Provisions.

Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Females 18 and over) Mines, packing houses, places of amusement where intoxicating liquors are made or sold, bowling alleys, bootblack establishments; the distribution of merchandise, or any other occupation not covered by 1942 legislation on women's hours of work.

Exemptions - Processing of sugar, molasses, or syrup.

Variations - 10-hour day, 60-hour week, permitted during emergencies in packing plants, canning plants, and factories handling fruits, sea foods, vegetables, and perishable foods.

See also Wartime Provisions.

(see Hours Work (A)).

LOUISIANA

- 4 -

Day of Rest - 1 day week established for employees and employments covered by the law.

Hours of Work - 8 hours a day. law 6.

Meal and Rest Periods 6

1. At least ½-hour interval must be allowed after 6 consecutive hours of work.

Coverage - Employees and employments covered by the law. 8 hours of Work law 6.

Section 2) establishments employing fewer than 3 females are exempt from this lunch period provision.

Variations - 8½ consecutive hours may be worked if employment ends immediately thereafter and the worker is dismissed for the day.

See also Wartime Provisions.

2. At least ½ hour between 10 a.m. and 3 p.m. must be allowed each day for lunch or recreation.

Coverage - Retail businesses employing female labor or female clerks.

Variations - See Wartime Provisions.

3. At least 1 hour between 10 a.m. and 3 p.m. must be allowed for the midday meal, lunch, or recreation.

Coverage (All clerks) - Retail businesses in cities of more than 50,000 inhabitants.

Variations - See Wartime Provisions.

4. At least ½ hour must be allowed for dinner to females 18 and over employed in establishments and occupations covered by the law. (See Hours of Work law 3.)

Variations - See Wartime Provisions.

Night Work - No law.

Toilets - Suitable seats (at least 1 for every 3 females), accessible to employees, must be provided by factories, mills, warehouses, manufacturing establishments, workshops, stores, or employers in any other occupations or establishments covered by reference in Act No. 237, 1934 Laws.

Retail mercantile establishments employing females alone or female clerks must be provided for male employees.

Each of the foregoing groups of employers must permit the female employees to use the seats which employees are not necessarily employed in their active duties.

Proper seats, or suitable accommodations for female operators in elevators must be provided, seats, water, or refreshments in any place of business.

Lunchrooms - No law.

Dressing rooms and rest rooms - Proper wash and dressing rooms must be supplied for female employees, in factories, mills, manufacturing establishments, workshops, warehouses, mercantile establishments or stores, and all other occupations and establishments hereinafter mentioned in which 5 or more young persons or women are employed, and every such institution in which 1 or more children, young persons, or women are employed.

Toilets - A sufficient number of water closets (at least 1 for each 25 employees), reasonably accessible to employees, must be supplied by employers in establishments listed under Showers and Bath Rooms.

If two or more persons and one or more females are employed, a sufficient number of water closets must be provided for each sex. Separate accommodations must be plainly designated for each sex. Closets not to be locked during working hours.

~~Beverages - See Section on Drinking rooms and rest rooms above.~~

Weight Lifting and Other Conditions of Work - No woman or minor employed in a factory, mill, or workshop ~~is~~ to be required to clean any part of the mill, gearing, or machinery while it is in motion.

Prohibited Occupations - No female may be employed in any concert hall or saloon where spirituous liquors, wines, or malt are sold at retail, to distribute, sell or take orders for such liquors, wines, or malt among the audience or frequenters of such hall or saloon.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - For duration of the present war and 60 days thereafter, 10 hours a day permitted if time and a half is paid for hours over 8. Weekly maximum (48 hours, 6 days) not to be exceeded. (Applicable to establishments and occupations listed under ~~section 1~~ of Hours of Work).

Notwithstanding any provision of law to the contrary, the labor commissioner is authorized under the State's "War Emergency Dispensation Act" to grant dispensations to employers in war work, when and if investigation shows that peace-time provisions of the labor laws interfere with maximum possible operation in war work.

Employment of women on the seventh day or for hours longer than the maximum fixed by statute must be paid for at time and a half.

I Certain conditions must be met before application is approved. Women's health and welfare must be safeguarded.

"War Work" is defined as (1) work in producing articles or materials on or for contracts for the army, navy, or other agency of the United States of an associated power of the United States, or (2) work in performing other services related to and necessary for successful waging of the present war.

Meal and Rest Periods: During the continuance of the present war, the labor commissioner may grant dispensation to employers engaged in war work if peacetime provisions of labor laws interfere with maximum possible operation. Certain conditions must be met before the application is approved. Women's health and safety must be safeguarded.

MAINE

Hours of Work

(1) Daily - Maximum, 9 hours.
Weekly - Maximum, 54 hours.

Coverage - (Females 16 and over). Workshops, factories, manufacturing or mechanical establishments.

Exemptions - Manufacturing establishments or businesses the materials and products of which are perishable; female executives, administrators, professionals, or supervisors or assistants to such persons who are on an annual salary basis of $1,200 or over.

Variations - In order to make one shorter workday in a week, overtime is permitted, but maximum hours may not exceed 10 a day or 54 a week.

In cases of emergency or extraordinary public requirement, public service companies are permitted overtime employment.

See also Wartime Provisions.

(2) Daily - No law.
Weekly - Maximum, 54 hours.

Coverage - (All females) Telephone exchanges employing more than 3 operators; mercantile establishments, stores, restaurants, laundries, telegraph offices, express or transportation companies.

Exemptions - Female executives, administrators, professionals, or supervisors, or office assistants to such persons who are on a salary basis of $1,200 or more annually.

Variations - Provisions inapplicable for period December 17 to Dec 24 inclusive; also to millinery shops or stores on the 8 days prior to Easter Sunday; and to public service in cases of emergency or extraordinary public requirement.

Day of Rest - No law.

Meal and Rest Periods.

(1) No female shall be employed or permitted to work for more than 5 consecutive hours without an interval of at least 1 hour.

Coverage - (All females). Workshops, factories, manufacturing or mechanical establishments, telephone exchanges, mercantile establishments, stores, restaurants, laundries, telegraph offices, express or transportation companies.

Exemptions - Establishments employing fewer than 3 females; manufacturing establishments or businesses the materials and products of which are perishable; telephone exchanges where operator at night is not required to operate the switchboard, but is able to sleep the major part of the night; female executives, administrators, professionals or supervisors, or office assistants to such persons on a salary basis of $1,200 or more annually.

Variations - 6½ hours continuous labor permitted if employment ends not later than 1:30 p.m. and the worker is dismissed for the remainder of the day. In cases of emergency or extraordinary public requirement public service companies are exempted.

(2) On any shift period exceeding 6½ hours, a consecutive rest period of not less than ½ hour must be given after a work period of not more than 6 ½ hours.

Coverage - (All females). Workshops, factories, manufacturing, or mechanical establishments.

Exemptions - Manufacturing establishments or businesses the materials or products of which are perishable; female executives, administrators, professionals or supervisors, or office assistants to such persons on annual salary of $1,200 or over.

Variations - Law not applicable to public service in cases of emergency or extraordinary requirements.

See also Wartime Provisions.

Night Work - No law.

Plant Facilities

Seating.

Mercantile establishments, stores, shops, hotels, restaurants, or other places where women work, must provide chairs, stools, or other contrivances for comfortable use of women employees when they are not actively engaged in the discharge of their duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

During the war emergency and ending on the declaration of peace, 10 hours' work permitted on any one day; more than 10 hours may be worked if agreed to by employee or her authorized representative and employer and reported to the commissioner of labor and industry within 48 hours. In no case, however, may the workweek exceed 54 hours. The 30-minute rest period may be adjusted or distributed over the work-shift if employer and employee or employee's representative agree to this and the commissioner of labor and industry approves.

Minimum Wage

Authority.

Wage board determines the appropriate minimum wage rate for occupations and employments in the industry. Commissioner of labor and industry makes the determination effective by serving a copy on each employer and filing in his office as a public record a certificate of the wage board's action, within the period specified by statute.

Coverage.

(1) Employees - Women, minors.

(2) Industries or Occupations - Packing fish or fish products in oil, mustard, or tomato sauce.

Orders.

Fish packing - Effective April 11, 1940.

~~Summary — 48 States~~

~~Alaska~~

Hours of Work

(A)

Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Females 18 and over) Workshops, factories, manufacturing or mechanical establishments.

Exemptions - Manufacturing establishments or businesses the materials and products of which are perishable; female executives, administrators, professionals, or supervisors or assistants to such persons who are on an annual salary basis of $1,200 or over.

Variations - In order to make one shorter workday in a week, overtime is permitted, but maximum hours may not exceed 10 a day or 54 a week.

In cases of emergency or extraordinary public requirement, public service companies are permitted overtime employment.

See also Wartime Provisions.

(B)

Daily - No laws.

Weekly - 54 hours.

Coverage - (All females) Telephone exchanges employing more than 5 operators; mercantile establishments, stores, restaurants, laundries, telegraph offices, express or transportation companies.

Exemptions - Female executives, administrators, professionals, or supervisors, or office assistants to such persons who are on a salary basis of $1,200, or more annually.

Variations - Provisions inapplicable for period December 17 to to 24 inclusive; also to millinery shops or stores on the 8 days prior to Easter Sunday; and to public service in cases of emergency or extraordinary public requirement.

Day of Rest - No law.

Meal and Rest Periods - No female shall be employed or permitted to work for more than 6 consecutive hours without an interval of at least 1 hour.

Variations - 6½ hours continuous labor permitted if employment ends not later than 1:30 p.m. and the worker is dismissed for the remainder of the day.

Coverage - (All females) Workshops, factories, manufacturing or mechanical establishments, telephone exchanges, mercantile establishments, stores, restaurants, laundries, telegraph offices, express or transportation companies.

Exemptions - Establishments employing fewer than 3 females; female executives, administrators, professionals or supervisors, or office assistants to such persons on a salary basis of $1,200 or more annually.

(2) On any shift period exceeding 6½ hours, a consecutive rest period of not less than ½ hour must be given after a work period of not more than 6 hours.

Coverage - (All females) Workshops, factories, manufacturing, or mechanical establishments.

Exemptions - Manufacturing establishments or business the materials or products of which are perishable; female executives, administrators, professionals or supervisors, or office assistants to such persons on annual salary of $1,200 or over.

Variations - Law not applicable to public service in cases of emergency or extraordinary requirements.

See also Wartime Provisions.

Night Work - No Law.

Plant Facilities:

Seating - Mercantile establishments, stores, shops, hotels, restaurants, or other places where women work, must provide chairs, stools, or other contrivances for comfortable use of women employees when they are not actively engaged in the discharge of their duties.

Lunchrooms - No Law.

Dressing and Rest rooms - No Law.

Toilets - No Law.

Health Welfare and Other Conditions of Work - No Law.

Prohibited Occupations - No Law.

Industrial Home Work - No Law.

Maternity Leave - No Law.

Wartime Provisions - During the war emergency and ending on the declaration of peace, 60 hours' work permitted on any one day; more than 10 hours may be worked if agreed to by employee or her authorized representative and employer and reported to the commissioner of labor and industry within 48 hours. In no case, however, may the workweek exceed 54 hours. The 30-minute rest period may be adjusted or distributed over the work-shift if employer and employee or employee's representative agree to this and the commissioner of labor approves.

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

MARYLAND

Hours of Work

(1) Daily - Maximum, 10 hours.
Weekly - Maximum, 60 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical, mercantile, printing, baking, or laundering establishment.

Exemptions - Canning, preserving, or preparing for canning or preserving of perishable fruits or vegetables.

Variations - In retail mercantile establishments outside of Baltimore City, 12 hours may be worked on Saturdays, Christmas Eve, and the 5 working days before Christmas Eve, if two rest periods of not less than 1 hour each are granted on each day overtime is worked and if 9 hours constitute the maximum day during remainder of the year.

(2) Daily - Maximum, 10 hours.
Weekly - No law.

Coverage - Employees in the service, or under the control, of corporations or manufacturing companies engaged in manufacturing cotton or woolen yarns, fabrics or domestics of any kind.

Exemptions - Certain exceptions for males over 21 years of age are provided.

Day of Rest - No law.

Meal and Rest Period.

(1) Not more than 6 consecutive hours may be worked without an interval of at least ½ hour.

Coverage - (Females). Employments covered by Daily and Weekly hours of work (1) with additional exemption of establishments employing fewer than 3 females.

Variation - 6½ hours of work permitted if employee is not allowed to work in said employment during the remainder of the day.

(2) At least two rest intervals of not less than 1 hour each required for women employed 12 hours on Saturdays, Christmas Eve, and the 5 days preceding Christmas Eve.

Coverage - Retail mercantile establishments outside the city of Baltimore.

Night Work - Not more than 9 hours' work in one day permitted if any part of it performed between 10 p.m. and 6 a.m.

Coverage - Employees and employments covered by Daily and Weekly hours of work.

Plant Facilities

Seating.

One chair or stool for the use of each woman employee when she is not actively engaged in the performance of her duties must be provided in any retail jobbing or wholesale dry-goods store, notion, millinery or any other business where females are employed for the purpose of serving the public.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Adequately equipped wash stations and places where employees may change their clothing and hang the clothes not in use must be provided for each sex in canning factories.

Female employees are required to wear clean aprons or dresses made of washable fabrics and also clean washable caps over the hair in places where foods are prepared for canning.

Convenient lavatory must be provided, supplied with soap, water, and towels, maintained in a sanitary condition in any building, room, basement, cellar or other place occupied for the preparation, manufacture, packing, canning, sale or distribution of food.

Toilet Rooms.

Separate facilities for each sex, in the ratio of 1 for every 20 women and 1 for every 25 men required in hotels, lodging houses, stores, offices, workshops, factories, and canneries.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female of any age to be employed, permitted, or suffered to work in any capacity in, about, or in connection with any mine, except in the offices.

No minor under 21 years of age shall be employed, permitted or suffered to work in, about, or in connection with any saloon or barroom where intoxicating liquors are sold.

Industrial Home Work.

Law covers manufacturing in whole or in part, altering, repairing, or finishing any articles whatsoever, except for the exclusive use of worker or immediate members of the household, or articles of wearing apparel prepared for use of the employer or members of his family, in any tenement or dwelling house, except a workshop not used for sleeping or cooking, with separate street entrance, and entirely separate from rest of building.

License must be obtained from commissioner of labor and statistics by any member of the family desiring to do home work. Application must show location of the premises, number of persons to be employed, and the full name and address of owner of the building in which the work is to be done.

Employer must obtain annual permit from the commissioner of labor and statistics. Permit granted only after inspection, must state maximum number of persons to be employed.

Employment on home work is limited to immediate members of the family, living in the work premises, specified as husband and wife, their children, or the children of either.

License is issued only if premises found free from communicable disease and unsanitary conditions. Official inspection required at least semi-annually.

Employer must keep register of names and addresses of all persons employed by him on home work; must issue with all articles or material a label showing in English the name and place of his business.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY - 42 STATES

Maryland

Hours of Work.

Daily - 8 hours.

Weekly - 50 hours.

Coverage - (Females 16 and over) Manufacturing, mechanical, mercantile, printing, canning, or laundering establishment.

Limitations - Canning, preserving, or preparing for canning or preserving of perishable fruits or vegetables.

Variations - In retail mercantile establishments outside of Baltimore City, 12 hours may be worked on Saturdays, Christmas Eve, and the five working days after Christmas Eve, if rest periods of not less than 1 hour each are granted on each day overtime is worked and if 9 hours constitute the maximum day during remainder of the year.

Daily - 10 hours

Weekly - 54 ~~hours~~

Coverage - Employees in the service, or under the control, of corporations or manufacturing companies engaged in manufacturing cotton or woolen yarns, fabrics or domestics of any kind.

Exemptions - Certain exceptions for males over 21 years of age are provided.

Day of Rest - No law.

Meal and Rest Periods - Not more than 6 consecutive hours may be worked without an interval of at least ½ hours.

Variations - 8½ hours of work permitted if employee is not allowed to work in said employment during the remainder of the day.

Females Employments

With additional exemptions under certain conditions for females over 3 females.

At least 2 rest intervals of not less than 1 hour each required for women employed 12 hours on Saturdays, Christmas Eve, and the 5 days preceding Christmas Eve.

Coverage - Retail mercantile establishments outside the city of Baltimore.

Night Work - Not more than 8 hours' work in one day permitted if any part of it performed between 10 p.m. and 6 a.m.

Coverage - (Females 16 and over) ~~Manufacturing, mechanical, mercantile, printing, baking or laundering establishment.~~

~~Exemptions - Canning, preserving, or preparing for canning or preserving of perishable fruits or vegetables.~~

Plant Facilities

Seating - 1 chair or stool for the use of each woman employee when she is not actively engaged in the performance of her duties,

~~Coverage~~ Retail jobbing or wholesale dry-goods store, notion, millinery or any other business where females are employed for the purpose of serving the public.

Lunchrooms - No law.

Dressing and Rest Rooms -

Adequately equipped wash stations and places where employees may change their clothing and hang the clothes not in use must be provided for each sex.

~~Coverage - Canning factories i.e., any place or establishment where food products are cooked, preserved, processed or prepared, and placed in cans or other containers and hermetically sealed for commercial purposes.~~

Female employees are required to wear clean aprons or dresses made of washable fabrics and also clean, washable caps over the hair.

Place where foods are prepared for canning.

Convenient lavatory must be provided, supplied with soap, water, and towels, maintained in a sanitary condition.

Building, room, basement, cellar or other place

[illegible] be provided for employees.

and best rooms.

male and female employees.

law.

, or suffered to work in

any mine, except in the

No minor under 21 years of age shall be employed, permitted or suffered to work in, about, or in connection with any saloon or barroom where intoxicating liquors are sold.

No person under 21 years of age shall be employed by any holder of a Class B beer, wine and liquor license in the sale of alcoholic beverages.

(c) Female employees are required to wear clean aprons or dresses made of washable fabrics and also clean, washable caps over the hair.

Coverage - Place where foods are prepared for canning.

(d) Convenient lavatory must be provided, supplied with soap, water, and towels, maintained in a sanitary condition.

Coverage - Building, room, basement, cellar or other place occupied for the preparation, manufacture, packing, canning, sale or distribution of food.

Toilet Rooms -

(1) Convenient toilet or toilet rooms must be provided for employees.

Coverage - Same as (3) under Dressing and Rest Rooms.

(2) Separate toilets must be provided for male and female employees.

Coverage - Canning factories.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations -

No female of any age to be employed, permitted, or suffered to work in any capacity in, about, or in connection with any mine, except in the offices.

No minor under 21 years of age shall be employed, permitted or suffered to work in, about, or in connection with any saloon or barroom where intoxicating liquors are sold.

No person under 21 years of age shall be employed by any holder of a Class D beer, wine and liquor license in the sale of alcoholic beverages.

Industrial Homework - Law covers manufacturing in whole or in part, altering, repairing, or finishing any articles whatsoever, except for the exclusive use of worker or immediate members of the household, or articles of wearing apparel prepared for use of the employer or members of his family, in any tenement or dwelling house, except a workshop not used for sleeping or cooking, with separate street entrance, and entirely separate from rest of building.

License must be obtained from commissioner of labor and statistics by any member of the family desiring to do homework. Application must show location of the premises, number of persons to be employed, and the full name and address of owner of the building in which the work is to be done.

Employer must obtain annual permit from the commissioner of labor and statistics. Permit, granted only after inspection, must state maximum number of persons to be employed.

Homework employment limited to immediate members of the family, living in the work premises, specified as husband and wife, their children, or the children of either.

License issued only if premises found free from communicable disease and unsanitary conditions. Official inspection required at least semi-annually.

Employer must keep register of names and addresses of all persons employed by him on homework; must issue with all articles or material a label showing in English the name and place of his business.

Maternity Leave - No law.

Wartime Provisions - None.

MASSACHUSETTS

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum, 48 hours.

Coverage - (Women; minors 16 and under 18). Factories, workshops, or any manufacturing, mechanical, or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel), hospital, telegraph office or telephone exchange (including a switchboard operator in a private exchange), express or transportation company, private club, office, letter shop; financial institution, laundry, hotel, manicuring or hairdressing establishment, motion-picture or any other place of amusement, garage, or as an elevator operator.

Exemptions - Persons employed in a supervisory capacity or serving exclusively as personal secretaries; professional personnel.

Variations - In manufacturing establishments and hotels where employment is determined by the department of labor and industries to be seasonal, 52 hours a week are allowed if average for year does not exceed 48 hours a week.

In extraordinary emergencies overtime is allowed in public service or other businesses requiring shifts. Department of labor must be notified.

Overtime may be permitted to make up time lost on a previous day of the same week, due to stoppage of machinery on which worker is dependent, provided stoppage is not less than 30 consecutive minutes. Department must be notified within 48 hours.

Commissioner may permit office workers to exceed daily (but not weekly) maximum.

In emergencies, hospital employees may work longer if commissioner authorizes such overtime.

See also Wartime Provisions.

Day of Rest. (All employees). A 6-day week established in workshops or manufacturing, mechanical or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel); and for watchmen (including guards in banks); employees maintaining fires; elevator operators in establishments covered by law.

Exemptions - Manufacture or distribution of gas, electricity, milk, or water; hotels, drug stores, livery stables or garages; transportation of food, or sale or delivery of food by establishments other than restaurants; janitors; employees whose duties include no work on Sunday other than (1) setting sponges in bakeries, (2) caring for live animals,

(3) caring for machinery; preparation, printing, publication, sale, or delivery of newspapers; farm or personal service.

Variations - Work on 7th day permitted if called for by an emergency that could not reasonably be anticipated.

See also Wartime Provisions.

Meal and Rest Periods.

No woman or child shall be employed more than 6 hours at one time without an interval of at least ½ minutes for a meal.

Coverage - (Women; minors under 18). Factory, workshop, mechanical or mercantile establishment (including premises used for a restaurant of for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel). See also Wartime Provisions.

Exemptions - Iron works, glass works, paper mills, letters - press establishments, print works, bleaching work, dyeing works.

Variations - 6½ hours at any one time if such employment ends not later than [illegible] p.m. and the worker is dismissed for the day; 7½ hours at any one time if worker is allowed sufficient opportunity to eat lunch on duty and if such employment ends not later than two p.m. and worker is dismissed for the day.

Commissioner of labor and industries may exempt a factory or workshop from statute's meal period provisions if he determines that continuous nature of plant's processes or special circumstances affecting a plant warrant such dispensation. He must be satisfied that employees' health will not suffer.

See also Wartime Provisions.

Night Work.

(1) Prohibited between 10 p.m. and 6 a.m.

Coverage - (Females 16 and over). Manufacturing or mechanical establishments (including elevator operators).

Variations - Prohibited between 6 p.m. and 6 a.m. for females 16 and over in the manufacture of textile goods or leather. However, successive Acts of the legislature have authorized commissioner to suspend 6 p.m. closing time for women over 21 in textile manufacturing and such women may be employed until 10 p.m., by official permit, subject to restrictions and conditions prescribed by the commissioner.

(2) Prohibited between 10 p.m. and 6 a.m.

Coverage - (Girls between 16 and 21). Factories, workshops, manufacturing, mechanical, or mercantile establishments, barber shops, bootblack stands or establishments, pool or billiard rooms, stables elsewhere than on a farm, garages, brick or lumber yards, telephone exchanges, telegraph or messenger offices, places of amusement, or in the

construction or repair of buildings, or in any contract or wage-earning industry carried on in tenement or other houses, or in any radio-broadcasting station except as talent.

Variations - Operators in regular service telephone exchanges may work until 11 p.m.

3. (Minors under 21). Employment prohibited from 10 p.m. to 5 a.m. as to messengers for telephone or messenger company except in delivery of messages directly connected with publishing of a newspaper.

Plant Facilities

Seating.

Suitable seats shall be provided for women employees in manufacturing, mechanical or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connecting with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel). Use of seats to be permitted when employee is not necessarily engaged in active duties of employment; also while employee is at work unless the work cannot be done in sitting position.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Separate lockers, closets, or other receptacles each with a lock and key must be provided for the use of employees in manufacturing or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel) or hotel where nature of work requires employees to change clothing before beginning work.

In factories, shops, or mechanical establishments, medical or surgical chest or both, and in such establishments employing 100 or more persons, satisfactory accommodations for treatment of persons injured or taken ill on the premises, must be provided as required by the department. Also, suitable and sanitary facilities for heating or warming food to be consumed by employees must be provided.

In mercantile establishments employing 20 or more women or children, medical and surgical chest must be provided as required.

Toilet Rooms.

Suitable, adequate, and convenient water closets and washing facilities, separate for each sex (if 10 males and 10 females employed), and plainly designated, in convenient, readily accessible locations, must be provided in every industrial establishment; that is, factory, workshop, bakery, mechanical establishment, laundry, foundry, tenement house, work rooms, all other buildings or parts thereof where manufacturing is carried on; mercantile establishments (including restaurants and cleaning, dyeing, laundering or pressing establishments). Toilet seats are required in the ratio of at least

1 to 25 employees or fraction thereof, washing facilities 1 to every 30 persons.

Other Regulations

Weight Lifting and Other Conditions of Work.

Boxes, baskets, and other receptacles weighing with their contents 75 pounds or over, which are to be moved by female employees in any manufacturing or mechanical establishment, shall be provided with pulleys or casters connected with such boxes or other receptacles, so as to be moved easily from place to place in such establishments.

No female shall be permitted to lift any core or number of cores upon one plate, the total cubical contents of which exceeds one cubic foot, or the total weight of which, including plate, core box or boxes exceeds 25 pounds, unless assisted by mechanical appliances that limit her physical effort to 25 pounds.

No female shall be permitted to work on any core, the total cubical contents of which exceeds two cubic feet, or the total weight of which, including plate, core box or boxes, exceeds 60 pounds.

Conditions of work and regulation of construction in connection with core-making by female employees are governed by rules of the department of labor and industries.

See Wartime Provisions.

Prohibited Occupations.

No person shall employ a minor under ~~20~~ 21 or permit him to work in, about, or in connection with any saloon or bar room where alcoholic liquors are sold.

See Wartime ~~Exemptions~~ Provisions.

Industrial Home Work.

Law covers manufacturing in a home of materials or articles for an employer, to be returned to him for other than the personal use of himself or members of his family, but exempts organizations incorporated in the Commonwealth for educational or philanthropic purposes and home work performed under supervision of the division of the blind in the department of education. It prohibits manufacture, or delivery of material for manufacture, of: Tobacco; drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and goods of like character.

Annual permit for employer is required; fee $50. Annual certificate issued free to employee; covers only work performed by applicant in his own home.

Home workers must be free from communicable disease and at least 16 years of age. Those under 18 years must obtain special permits.

Employer must keep prescribed records of home workers, work done, and wages paid each worker; also record of agents or contractors and of sources of material for homework manufacture. Employer's name and address must appear on each package of articles or materials delivered for home work. Employer is responsible for all transportation costs.

All persons employed in home work must be paid rates equivalent to factory rates on the same type of work, and rates may not be less than the minimum established by the minimum-wage commission. Home workers employed both in factory and home may not work more than 9 hours in one day or 45 hours in one week in both places. Homes must be inspected before home worker's first certificate issued, and at subsequent intervals. Certificates are non-transferable, being good for one location only.

Maternity Leave.

Employers in mercantile, manufacturing or mechanical establishments forbidden knowingly to employ a woman during two weeks before childbirth or the four weeks following.

Wartime Provisions

During continuance of present war with any foreign country, commissioner of labor and industries is authorized to suspend application or operation of provisions of the labor law or of any rule or regulation regulating, limiting, or prohibiting the employment of women or minors in such instances and for such periods of time as he deems necessary to supply any deficiency in manpower.

The authority conferred on the governor for the war emergency period includes among other things powers related to (1) labor, business or work on Sundays or legal holidays, (2) suspension of the operation of any statute, rule, or regulation affecting employment if in his opinion such suspension is necessary to expedite the production, processing, or transportation of war materials.

Minimum Wage

Authority.

Commissioner of labor and industries issues order, based on recommendations of wage board as to minimum rates for occupation.

Coverage.

(1) Employees - Women, minors.

(2) Industries or Occupations - Any, except domestic service and farm labor.

Dec, 15, 1944

MASSACHUSETTS

Orders.

		Effective Date
Electrical Equipment and Supplies (Mandatory)	-	Oct. 1, 1937
~~Retail Store~~		~~Oct. 1, 1937~~
Boot and Shoe cut stock and findings	-	Oct. 1, 1937
Men's Clothing and Raincoat	-	Oct. 1, 1937
Men's Furnishings	-	Oct. 1, 1937
Brush	-	Oct. 1, 1937
Women's Clothing	-	Oct. 1, 1937
Corset	-	Oct. 1, 1937
Stationery Goods and Envelops	-	Jan. 1, 1938
Toys, Games and Sporting Goods	-	Jan. 1, 1938
Women's and Children's Underwear, Neckwear, and Cotton Garment	-	July 1, 1938
Druggists' Preparations, Proprietary Medicines and Chemical Compounds	-	Nov. 1, 1938
Bread and Bakery Products (Mandatory)	-	Nov. 1, 1938
Pocketbook and Leather Goods	-	Nov. 1, 1938
Paper Box	-	Nov. 2, 1938
Millinery	-	Feb. 1, 1939
Canning and Preserving, etc. (Mandatory)	-	Mar. 2, 1939
Knit Goods	-	June 2, 1939
Office and Other Building Cleaners	-	Dec. 1, 1940
Jewelry, etc.	-	Dec. 1, 1940
Office Workers	-	Aug. 1, 1941
Restaurant and Hotel Restaurant	-	Apr. 15, 1942
Candy - revised	-	Mar. 1, 1943
Beauty Culture - revised (Mandatory)	-	Apr. 1, 1943
Laundry and Dry Cleaning - revised	-	Feb. 1, 1944
Mercantile Classification (Directory)		Oct. 30, 1944

Equal Pay

To Law.

SUMMARY - BY STATES

MASSACHUSETTS

Hours of Work -

Daily - 9 hours.

Weekly - 48 hours.

Coverage - (Women and minors 16 and under 18). Factories, workshops, or any manufacturing, mechanical, or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel), hospital, telegraph office or telephone exchange (incluing a switchboard operator in a private exchange), express or transportation company, private club, office, letter shop, financial institution, laundry, hotel, manicuring or hairdressing establishment, motion-picture or any other place of amusement, garage, or as an elevator operator.

Exemptions - Persons employed in a supervisory capacity or serving exclusively as personal secretaries; professional personnel, employees in domestic service; farm labor.

Variations - In manufacturing establishments and hotels where employment is determined by the department of labor and industries to be seasonal, 52 hours a week are allowed if average for year does not exceed 48 hours a week.

In extraordinary emergencies overtime is allowed in public service or other businesses requiring shifts. Department of Labor must be notified.

Overtime may be permitted to make up time lost on a previous day of the same week, due to stoppage of machinery on which worker is dependent, provided stoppage is not less than 30 consecutive

minutes. Department must be notified within 48 hours.

Commission may permit office workers to exceed daily (but not weekly) maximum.

In emergencies, hospital employees may work longer if commissioner authorizes such overtime.

See also Wartime Provisions.

Day of Rest - 6-day week established for all employees in workshops or manufacturing, mechanical or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel); watchmen; employees maintaining fires (other than janitors in residential apartments); elevator operators, guards in banks.

Exemptions - Manufacture or distribution of gas, electricity, milk, or water; hotels, drug stores, livery stables or garages; transportation, sale, or delivery of food by establishments other than restaurants; janitors; employees whose duties include no work on Sunday other than (1) setting sponges in bakeries, (2) caring for live animals, (3) caring for machinery; preparation, printing, publication, sale, or delivery of newspapers; farm or personal service; any labor called for by an emergency that could not reasonably be anticipated.

Meal and Rest Periods - No woman or child shall be employed more than 6 hours at one time without an interval of at least 45 minutes for a meal.

MASSACHUSETTS

I Variations - 6½ hours at any one time if such employment ends not later than one p.m. and the worker is dismissed for the day; 7½ hours at any one time if worker is allowed sufficient opportunity to eat lunch on duty, and if such employment ends not later than two p.m. and worker is dismissed for the day.

II Coverage - (Women, minors under 18), Factory, workshop, mechanical or mercantile establishment (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel).

See also Maritime Provisions.

Night Work - Prohibited between 10 p.m. and 6 a.m.

II Coverage - (Females 16 and over), Manufacturing or mechanical establishments.

Exemptions - Manufacture of textile goods or leather.

Prohibited between 6 p.m. and 6 a.m. for females 16 and over in the manufacture of textile goods or leather.

I Variations - Women over 21 in textile manufacturing may be employed until 10 p.m., by official permit, subject to restrictions and conditions prescribed by the Commissioner.

2. Prohibited between 10 p.m. and 6 a.m. (girls between 16 and 21).

II Coverage - Factories, workshops, manufacturing, mechanical, or mercantile establishments, barber shops, bootblack stands or establishments, pool or billiard rooms, stables elsewhere than on a farm, garages, brick or lumber yards, telephone exchanges, telegraph or messenger offices, places of amusement, or in the construction or repair of buildings, or

Massachusetts - Cont'd

in any contract or wage-earning industry carried on in tenement or other houses, or in any radio-broadcasting station except as talent.

Variations- Operators in regular service telephone exchanges may work until 11 p.m.

Plant Facilities

Seating - Suitable seats shall be provided for women employees in manufacturing, mechanical or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals, premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel). Use of seats to be permitted when employee is not necessarily engaged in active duties of employment; also while employee is at work unless the work cannot be done in sitting position.

Lunchrooms - No law.

Dressing and Rest Rooms - Separate lockers, closets, or other receptacles each with a lock and key must be provided for the use of employees in manufacturing or mercantile establishments (including premises used for a restaurant or for publicly providing and serving meals; premises used in connection with cleansing, dyeing, laundering, or pressing fabrics or wearing apparel) or hotel where nature of work requires employees to change clothing before beginning work.

Medical or surgical chest or both, and satisfactory accommodations must be provided as required by the department free of expense to persons injured or taken ill on the premises.

Suitable and sanitary facilities for heating or warming food to be consumed by employees must be provided.

Coverage - Employers of 100 or more persons in factories, shops, or mechanical establishments where machinery is used for manufacturing or other purpose except for elevators or for heating or hoisting apparatus.

Toilet Rooms - Suitable, adequate and convenient water closets and washing facilities, separate for each sex and plainly designated, in convenient, readily accessible locations must be provided in the ratio of at least 1 to 25 employees or fraction thereof,

Coverage - Every industrial establishment; that is, factory, workshop, bakery, mechanical establishment, laundry, foundry, tenement house, work rooms, all other buildings or parts thereof where manufacturing is carried on; mercantile establishments (including restaurants and cleaning, dyeing, laundering or pressing establishments).

Weight Lifting and Other Conditions of Work - Boxes, baskets and other receptacles weighing with their contents 75 pounds or over, which are to be moved by female employees in any manufacturing or mechanical establishment shall be provided with pulleys or casters connected with such boxes or other receptacles, so as to be moved easily from place to place in such establishments.

No female shall be permitted to lift any core or number of cores upon one plate, the total cubical contents of which exceeds one cubic foot, or the total weight of which, including plate, core box or boxes exceeds 25 pounds, unless assisted by mechanical appliances that limit her physical effort to 25 pounds.

No female shall be permitted to work on any core, the total cubical contents of which exceeds two cubic feet, or the total weight of which, including plate, core box or boxes, exceeds 60 pounds.

Conditions of work and regulation of construction, in connection with core-making by female employees, governed by rules of the Department of Labor and Industries. ~~See chart No. [illegible] for details.~~

Prohibited Occupations - No person shall employ a minor under 21 or permit him to work in, about, or in connection with any saloon or bar room where alcoholic liquors are sold.

Industrial Homework - Law covers manufacturing in a home of materials or articles for an employer, to be returned to him for other than the personal use of himself or members of his family. Exempts organizations incorporated in the commonwealth for educational or philanthropic purposes; homework performed under supervision of the division of the blind in the department of education. Prohibits manufacture, or delivery of material for manufacture, of: Tobacco, drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and goods of like character.

Annual permit for employer required; Fee $50. Employee annual certificate issued free; covers only work performed by applicant in his own home.

Homeworkers must be free from communicable disease and at least 16 years of age. Those under 18 years must obtain special permits.

Employer must keep prescribed records of homeworkers, work done, and wages paid each worker; also record of agents or contractors and of sources of material for homework manufacture. Employer's name and address must appear on each package of articles or materials delivered for homework. Employer responsible for all transportation costs.

All persons employed in home work must be paid rates equivalent to factory rates on the same type of work, and may not be less than the minimum established by the minimum-wage commission. Homeworkers employed both in factory and home may not work more than 9 hours in one day or 48 hours

in one week in both places. Homes must be inspected before homeworker's first certificate issued, and at subsequent intervals. Certificates are non-transferable, good for one location only.

Maternity Leave - Employers in mercantile, manufacturing or mechanical establishments forbidden knowingly to employ a woman during two weeks before childbirth or the four weeks following.

Wartime ~~exemptions~~ provisions - During continuance of present war with any foreign country, commissioner of labor and industries is authorized to suspend application or operation of provisions of the labor law or of any rule or regulation regulating, limiting or prohibiting the employment of women or minors in such instances and for such periods of time as he deems necessary to supply any deficiency in manpower.

The authority conferred on the governor for the war emergency period includes among other things powers related to (1) labor, business or work on Sundays or legal holidays (2) suspension of the operation of any statute, rule, or regulation affecting employment if in his opinion such suspension is necessary to expedite the production processing or transportation of war materials.

9

Minimum Wages

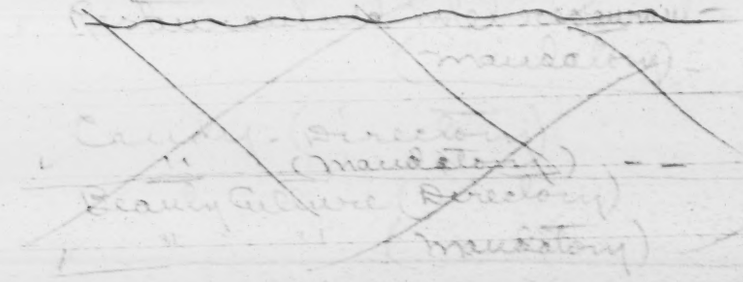
Authority ① Commissioner of Labor ... to investigate wages ... orders based on ... recommendations of ... Board as to minimum rates for ... classifications.

Coverage ②

1) Employees — Women, minors.

2) Industries & Occupations — Any ... domestic service and farm labor.

Orders ③ ... Secretary ...



Effective Apr. 15, 1942
" Sept. 15, 1942
" March 1, 1943
" April 1, 1943

Laundering and Cleaning
(Mandatory) — revised — Effective Feb. 1, 1942

Mercantile — (Mandatory) — Effective July 1, 1941

Electrical Equipment and Supplies
(Mandatory) — Effective Oct 1, 1937

Retail Store " —

Boot and Shoe cut stock and findings " 1

Men's Clothing and Furnishings " —

Men's Furnishings " —

Brush " —

Women's Clothing " —

Corset " —

Women's Neckwear, Handkerchiefs " — Jan. 1, 1938

Soap, Fancy and Shaving Soaps " —

Women's and Children's Underwear, Nightwear and Cotton Garments " — July 1, 1938

Artificial Limb and Feather Trade (Mandatory) — Nov. 1, 1938

Infants' and Barbers' Trades " — Nov. 1, 1938

Hosiery Preparations
Preliminary Processes and Chemical Compounds " — Nov. 1, 1938

(Mandatory) — " Nov. 1, 1938

— " Feb. 1, 1939

9/12: Mass
This to be made so that chronological order of orders
Would be followed. Mass Ltd. has so many orders it seemed better to show them in sequence

Soma for Office Clerks Jewelers

(see next sheet)

3 - Mars 1st

Canadian Pacific Railway (Montreal) - 24 Mar. 1939

Knit Goods - (Montreal) - June 2, 1939

Jewellery (Montreal) - Dec. 1, 1940

Office and Show Cases (Montreal) - Dec. 1, 1940

Office workers (Montreal) - Aug. 1, 1941

Passenger and Freight Services (Montreal) - Mar. 15, 1942

Canvas - revised - Mar. 1, 1943

Electric Current (Montreal) - Dec. 1, 1943

Canadian Pacific Railway (Montreal) revised - Feb. 1, 1944

Wages (Montreal) - Dec. 5, 1944

Boot & Shoe Workers

Wages on repairs for navy orders

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

MICHIGAN

Hours of Work

(1) Daily - 9 hours (average); 10 hours' maximum for any day.
Weekly - Maximum, 54 hours.

Coverage - (All females). Factories, mills, warehouses, workshops, quarries; clothing, dressmaking, or millinery establishments; or any place where goods are prepared for manufacturing; laundries, stores, shops (including beauty shops), or other mercantile establishments, offices (including telephone offices), restaurants, theaters, concert halls, music halls, hotels, hospitals, street or electric railways; elevator operators.

Exemptions - Preserving and shipping perishable goods in fruit and vegetable canning or fruit packing establishments; student and graduate nurses in hospitals, nurses in fraternal or charitable homes. (These exempted occupations must be approved by the labor department as being not injurious to health.)

(2) Daily - Maximum, 12 hours.
Weekly - Maximum, 70 hours.

Coverage - (Females). Canning industry (1944 order).

Variation - Longer hours in emergencies if approval of department obtained.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Proper and suitable seats, rests or stools, required for all females employed in stores, shops, offices, or manufactories. Use of seats at reasonable times must be permitted. Employer not to require employees to stand when not necessarily in service.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Proper wash rooms and dressing rooms, kept clean, required in manufacturing establishments, workshops, hotels, or stores employing five or more persons, and institutions employing two or more women or minors. Bed or cot must be furnished and first-aid stations provided.

Toilet Rooms.

Proper water closets, in the ratio of at least 1 for every 25 persons employed, must be provided, reasonably accessible for use of employees in manufacturing establishments, workshops, hotels, or stores in which 5 or more persons are employed and any institution in which 2 or more women or minors are employed.

When at least 1 of 2 or more of the employees is a female, toilets must be separate and distinct and plainly designated for each sex.

Other Regulations

Weight Lifting and Other Conditions of Work.

No woman shall be required to lift more than 35 pounds or carry more than 20 pounds when ascending stairs. Overhead lifting or stacking by women is prohibited.

No female may be employed in operating polishing wheels, belts, buffers, and so forth, in any basement or room wholly or partly beneath the surface of the ground.

Approval of the commissioner of labor must be obtained to employ women in foundries or in such hazardous occupations as arc welding or dry grinding or in the handling of such harmful substances as lead, benzine, carbon disulphide, mercury, and so forth.

Industrial Home Work.

The law covers the manufacture of coats, vests, trousers, knee pants, overalls, skirts, dresses, cloaks, hats, caps, suspenders, jerseys, blouses, waists, waist bands, underwear, neckwear, furs, fur trimming, fur garments, shirts, hosiery, purses, feathers, artificial flowers, cigars and cigarettes, in any room or apartment in any tenement or dwelling house, except in the case of a seamstress doing work on articles for family use.

Employer must have permit, showing the maximum number of persons allowed to be employed and that premises intended for homework use are officially approved for occupancy by the home workers. Permit must be posted conspicuously in the workplace.

Employers must keep a written register of home workers' names and addresses, also of contractors.

Health regulations as to working space, lighting, heating, and ventilation are established.

Maternity Leave - No law.

~~Working Provisions~~

Jan. 1, 1945

MICHIGAN

Wartime Provisions

No law.

Minimum Wage

No law.

Add eq. Pay

Eq Pay

Michigan

Courtesy

Employers shall keep male and female employees in the same departments in separate rooms or enclosures.

Employees shall not use toilet rooms, washrooms, dressing rooms, or other conveniences provided for the use of persons of the opposite sex.

Employees shall not be required to use stairways, or other exits, exclusively assigned to persons of the opposite sex.

Employees shall not be required to use any tools or equipment which have not been properly disinfected after being used by any other person.

Employees shall not be required to perform services in such a manner or under such conditions as will unnecessarily endanger the health or safety of such employees.

Employers shall not employ any female in any occupation within three weeks after childbirth.

Violation - Any employer who violates any of the provisions of this act shall be guilty of a misdemeanor.

Effective Date - August 1st, 1919.

SUMMARY - BY STATES

MICHIGAN

Hours of Work

(4) Daily - 9 hours (average); 10 hours' maximum for any day.

Weekly - 54 hours.

Coverage - Factories, mills, warehouses, workshops, quarries; clothing, dressmaking, or millinery establishments; or any places where goods are prepared for manufacturing; laundries, stores, shops, or other mercantile establishments (including beauty shops), offices, restaurants, theaters, concert halls, music halls, hotels, hospitals, street or electric railways; elevator operators. (All females, ~~boys under 18~~).

Exemptions - Preserving and shipping perishable goods in fruit and vegetable canning or fruit packing establishments; student and graduate nurses in hospitals, nurses in fraternal or charitable homes. (These exempted occupations must be approved by the labor department as being not injurious to health).

(5) Daily - 12 hours.

Weekly - 70 hours.

Coverage - (Females) Canning industry (1944 order).

Day of Rest - No law.

Meal and Rest Periods - No laws.

Night Work - No laws.

Plant Facilities

Seating - Proper and suitable seats, rests or stools, required for all females employed in stores, shops, offices, or manufactories. Use of seats at reasonable times must be permitted. Employer not to require employees to stand when not necessarily in service.

Lunchrooms - No laws.

Dressing and Rest Rooms - Proper wash rooms and dressing rooms, kept clean, required in manufacturing establishments, workshops, hotels, or stores employing five or more persons, and institutions employing two or more women or minors.

Toilets - Proper water closets, in the ratio of at least 1 for every 25 persons employed must be provided, reasonably accessible for use of employees in manufacturing establishments, workshops, hotels, or stores in which 5 or more persons are employed and any institution in which 2 or more women, ~~children or young persons~~ minors are employed.

When at least 1 of 2 or more of the employees is a female, toilets must be separate and distinct and plainly designated for each sex.

Weight Lifting and Other Conditions of Work - No woman shall be required to lift more than 35 pounds or carry more than 20 pounds when ascending stairs. Overhead lifting or stacking by women is prohibited.

Prohibited Occupations - No female may be employed in operating polishing wheels, belts, buffers, and so forth in any basement or room wholly or partly beneath the surface of the ground.

Approval of the Commissioner of Labor must be obtained to employ women in foundries or in such hazardous occupations as ~~xxx~~ arc welding or dry grinding or in the handling of such harmful substances as lead, benzine, carbon disulphide, mercury, etc.

Industrial Homework Law - Covers the manufacture of coats, vests, trousers, knee pants, overalls, skirts, dresses, cloaks, hats, caps, suspenders, jerseys, blouses, waists, waist bands, underwear, neckwear, furs, fur trimming, fur garments, shirts, hosiery, purses, feathers, artificial flowers, cigars and cigarettes, in any room or apartment in any tenement or dwelling house, except in the case of a seamstress doing work on articles for family use.

Employer must have permit, showing the maximum number of persons allowed to be employed, and that premises intended for homework use are officially approved for occupancy by the homeworkers. Permit must be posted conspicuously in the work place.

Employers must keep a written register of homeworkers' names and addresses, also of contractors.

Health regulations as to working space, lighting, heating, and ventilation are established. See Chart V for details.

Maternity Leave - No Law.

Wartime Provisions - None.

MINNESOTA

Hours of Work

Daily - No law.
Weekly - Maximum, 54 hours.

Coverage - (Females 16 and over). Public housekeeping, manufacturing, mechanical, mercantile, or laundry occupation, or telephone operator.

Exemptions - Preserving perishable fruits, grains, or vegetables, if employment does not last more than 75 days in year; telephone operators in towns under 1,500 population; night employees who are at their place of employment not more than 12 hours and have opportunity to sleep at least 4 hours.

Variations - On application of employer Industrial Commission may for cause shown exempt employer or class of employers from provisions of the act.

Overtime permitted in cases of emergency in which the safety, health, morals, or welfare of the public may otherwise be affected. In emergency periods not exceeding 4 weeks in aggregate in any calendar year, industrial commission may allow overtime and prescribe appropriate rules.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats must be provided for women employees and their use permitted to the extent reasonably necessary for preservation of health. Number of seats, also type of seats, is to be determined by the industrial commission.

The law covers all places that employ women, including factories, mills, workshops, laundries, dyeing and cleaning establishments, mercantile establishments, offices and office buildings, hotels, restaurants, theaters and other places of amusement, transportation systems, public utilities, engineering works, the erection of buildings and yards; domestic service and agricultural labor are exempted.

Lunch Rooms.

Suitable places for employees to eat meals must be provided in any place of employment (see Seating) where dust or fumes of poisonous compounds are present.

Dressing and Rest Rooms.

In every place of employment (see Seating) where a change of clothing is necessary, suitable dressing rooms must be provided, separate for each sex.

Toilet Rooms.

In all places where 5 or more persons of opposite sexes are employed (except domestic service and agricultural labor), separate toilets for each sex must be provided, and plainly marked.

In every place of employment (see Seating) the ratio of toilets is based on the number of employees on a shift, as follows:

1	toilet	for	every	20	persons,	up to 100 employees.
1	"	"	"	30	"	100 to 500 employees.
1	"	"	"	35	"	500 to 1,000 employees.
1	"	"	"	40	"	more than 1,000 employees.

Other Regulations

Weight Lifting and Other Conditions of Work.

No female employed in a core-making room may be permitted to make or handle cores when the combined weight of core, core box, and plate exceeds 25 pounds.

No female shall be employed in placing cores into ovens or in taking cores out of ovens.

No woman shall be required or permitted to oil or clean moving machinery.

Prohibited Occupations.

No girl under 21 shall be employed or permitted to work as a messenger for a telegraph or messenger company.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

[illegible].

Minimum Wage

Authority.

Industrial commission sets minimum wage and issues a mandatory order; Or commission appoints an advisory board to investigate wages in occupation and make recommendations as to minimum rates, before issuing mandatory order.

Coverage.

(1) Employees - Women, minors.

(2) Industries or Occupations - Any.

Orders.

Effective Date

General - All occupations except those for which special Orders issued ~~- Effective~~ July 11, 1938.
Telegraph ~~Effective~~ January 10, 1939.
Needlecraft ~~Effective~~ March 1, 1939.
Restaurant ~~Effective~~ March 1, 1939.
Laundry ~~Effective~~ May 1, 1939.

SUMMARY - BY STATE

MINNESOTA

Hours of Work -

Daily - No law.

Weekly - 54 hours.

Coverage - Public housekeeping, manufacturing, mechanical, mercantile, or laundry occupation, or telephone operator (Females 16 and over).

Variations - On application of employer Industrial Commission may for cause shown exempt employer or class of employers from provisions of the act: Preserving perishable fruits, grains, or vegetables, if employment does not last more than 75 days in year; telephone operators in towns under 1,500 population; night employees who are at their place of employment not more than 12 hours and have opportunity to sleep at least 4 hours.

Overtime permitted in cases of emergency in which the safety, health, morals, or welfare of the public may otherwise be affected. In emergency periods not exceeding 4 weeks in aggregate in any calendar year, industrial commission may allow overtime and prescribe appropriate rules.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities -

Seating - Suitable seats must be provided for women employees, and their use permitted to the extent reasonably necessary for preservation of health. Number of seats, also type of seats, to be determined by the industrial commission.

Coverage - All places that employ women, including factories, mills, workshops, laundries, dyeing, and cleaning establishments, mercantile establishments, offices and office buildings, hotels, restaurants, theaters, and other places of amusement, transportation systems, public utilities, engineering works, the erection of buildings and yards.

Exemptions - Domestic service, agricultural labor.

Lunchrooms - Suitable places for employees to eat meals must be provided in any place of employment where dust or fumes of poisonous compounds are present.

Dressing and Restrooms - In every place of employment where a change of clothing is necessary, suitable dressing rooms must be provided, separate for each sex.

Toilets - In all places where 5 or more persons of opposite sexes are employed (except domestic service and agricultural labor), separate toilets for each sex must be provided, and plainly marked.

The ratio of toilets is based on the number of employees on a shift, as follows:

1	toilet	for every	20	persons, up to 100 employees.
1	"	"	30	" 100 to 500 employees.
1	"	"	35	" 500 to 1,000 "
1	"	"	40	" more than 1,000 employees.

Weight-lifting and Other Conditions of Work - No female employed in a core-making room may be permitted to make or handle cores when the combined weight of core, core box, and plate exceeds 25 pounds.

MINNESOTA

Prohibited Occupations - No female shall be employed in placing coffee into ovens or in taking coffee out of ovens.

No woman shall be required or permitted to oil or clean moving machinery.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - None

No person under 21 shall be employed or permitted to work as a messenger for a telegraph or messenger company

Minimum Wage

Authority

OR

Employers - workers, unions.

Orders

- General - All or various trades
- Telegraph

Effective July 11, 1938.
Eff Jan 19, 1939.

More Later see for "marking for Tyranny"

OVER

Meatbread [redacted] Mar. 1 1939.

Restaurant [redacted] Mar. 1 1939.

Laundry [redacted] May 1 1939.

MISSISSIPPI

Hours of Work

Daily - Maximum, 10 hours.
Weekly - Maximum, 60 hours.

(1) Coverage - (Females 16 and over). Laundry, millinery, dressmaking, store, office, mercantile establishment, theater, telegraph or telephone office, or any other occupation.

Exemptions - Domestic service.

Variations - Overtime permitted in cases of emergency or of public necessity.

(2) Coverage - (Employees over 16). Mills, canneries (except fruit or vegetable canneries), workshops, factories, or manufacturing establishments.

Exemptions - Railroads or other public service; establishments handling or converting perishable agricultural products in season which use adult male labor only.

Variations - Overtime permitted up to 30 minutes daily for first 5 days of the week, if the additional time so worked is deducted from the last day of the week.

Persons employed at night only may work 11½ hours on the first 5 nights of the week and 3+3/4 hours on Saturday night.

Indefinite overtime allowed in cases of emergency or of public necessity.

Day of Rest. - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.- No law.

Lunch Rooms .

In industrial establishments (i.e., places where articles are manufactured, repaired, cleaned, sorted, or renovated, in whole or in part, for profit, sale, or compensation), lunch rooms must be provided apart from work rooms, if it is inconvenient for employees to eat away from the premises. Standards of maintenance and equipment prescribed in regulations.

Employees exposed to lead or other toxic material on the job are forbidden to eat at their work benches.

CONFIDENTIAL

Dec. 5, 1944

Dressing and Rest Rooms.

Dressing rooms must be provided for employees in industrial establishments (see Lunch rooms for definition) if the type of work involves exposure to excessive dust, vapors, fumes or heat.

In establishments where women are employed, adequate retiring and dressing space must be provided for their use. Suitable clothes hooks must be provided.

Maintenance standards set in regulations.

Toilet Rooms.

Industrial establishments, as defined under Lunch Rooms, must provide separate water closets (1 for every 30 persons of either sex). Maintenance and equipment standards set in regulations.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY - By States

ALABAMA

Hours of Work

Daily - 10 hours.

Weekly - 60 hours.

Coverage - (Females 16 and over) Laundry, millinery, dressmaking store, office, mercantile establishment, theater, telegraph or telephone office, or any other occupation.

Exemptions - Domestic service

Variations - Overtime permitted in cases of emergency or of public necessity.

Coverage - (Employees over 16), Mills, canneries (except fruit or vegetable canneries), workshops, factories, or manufacturing establishments.

Exemptions - Railroads or other public service.

Variations - Establishments handling or converting perishable agricultural products in season which use adult male labor only.

Overtime permitted up to 30 minutes daily for first five days of the week, if the additional time so worked is deducted from the last day of the week.

Persons employed at night only may work 11½ hours on the first 5 nights of the week and 3-3/4 hours on Saturday night.

Indefinite overtime allowed in cases of emergency or of public necessity.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

MISSISSIPPI

-2-

Other Legislation

Prohibited Occupations - No law.

Plant Sanitation

Heating - No law.

Lunchrooms - No law.

Dressing and Washrooms - No law.

Toilets - No law

Industrial Homework - No law

Maternity Leave - No law.

Hauling Regulations - No law.

Minimum Wage

No law.

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

3pp

MISSOURI

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum 54 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishment, factory, workshop, laundry, bakery, restaurant, place of amusement, or stenographic or clerical work of any kind in the above industries, express, transportation, or public utility business, common carrier, or public institution.

Exemptions - Telegraph or telephone company.

Variations - Establishments canning or packing perishable farm products in places of less than 10,000 population, for a period of 90 days annually are not subject to the hours law.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

A sufficient number of seats, conveniently located, must be provided to accommodate comfortably the female employees in manufacturing, mechanical, mercantile, or other establishments. Use of seats must be permitted when employee's duties do not require standing.

Lunch Rooms - No law.

Dressing and Rest Rooms.

In factories, workshops, or other establishments employing females, suitable places must be provided for women and girls to wash and dress if they are required to perform any kind of unclean work.

A room separate and apart from the workshop where substances (specified in the law) considered dangerous to health are used or handled by employees in harmful quantities, must be provided, and equipped with a lavatory containing a sufficient number of basins or spigots. Hot and cold water, soap, individual towels, etc., must be supplied. Compartment lockers required for employees' clothing.

Male and female employees must be provided for separately.

Toilet Rooms.

Manufacturing, mechanical, mercantile, and other establishments employing persons of both sexes must provide separate water closets for them.

Factories employing 3 or more persons, or workshops employing 3 or more children, young persons, or women, must provide a sufficient number of proper toilet accommodations, reasonably accessible for employees' use. Separate accommodations for each sex must be provided, plainly designated, where both sexes are employed.

Other Regulations

Weight Lifting and Other Conditions of Work.

No woman or minor shall be required to clean any part of the mill, gearing or machinery while it is in motion.

No woman shall be required to work between the fixed and traversing, or the traversing parts of any machine in motion by the action of any mechanical power except the machine she is operating.

Prohibited Occupations.

No female is permitted to enter any mine to work therein.

Industrial Home Work.

Law covers the manufacture of any wearing apparel, purses, feathers, artificial flowers or other goods for male or female wear in any room or apartment in any tenement or dwelling house.

Not more than 3 persons besides the immediate members of the family living in the place where home work is done may be employed on home work.

Employer is required to keep record of names and addresses of home workers, also of contractors employed by him.

Articles found to have been made by home work in violation of the home work law, or under unclean or unhealthy conditions, shall be conspicuously labelled by the official inspector as "tenement made" or "made under unhealthy conditions."

Maternity Leave.

For 3 weeks before and 3 weeks after childbirth, it is unlawful for any person, firm or corporation knowingly to employ, or permit to be employed, a female in manual, physical, stenographic or clerical work of any character, in any manufacturing, mechanical, or mercantile establishment, factory, workshop, laundry, bakery, restaurant, any place of amusement, express, transportation or public utility business, common carrier, or public institution.

Wartime Provisions

No law.

Minimum Wage

No law.

SUMMARY OF STATES

MISSOURI

1. Hours of Work.

   Daily - 9 hours.

   Weekly - 54 hours.

   Coverage - (Females 16 and over) Manufacturing, mechanical, or mercantile establishment, factory, workshop, laundry, bakery, restaurant, place of amusement, or stenographic or clerical work of any kind in the above industries, express, transportation, or public utility business, common carrier, or public institution.

   Exemptions - Telegraph or telephone company.

   Variations - Establishments canning or packing perishable farm products in places of less than 10,000 population, for a period of 90 days annually are not subject to the hours law.

2. Day of Rest - No law.

3. Meal and Rest Periods - No law.

4. Night Work - No law.

5. Plant Facilities:

   Seating - A sufficient number of seats, conveniently located, must be provided to accommodate comfortably the female employees in manufacturing, mechanical, mercantile, or other establishments. Use of seats must be permitted when employee's duties do not require standing.

6. Lunchrooms - No law.

   Dressing and Rest Rooms - In factories, workshops, or other establishments employing females, suitable places must be provided for women and girls to wash and dress if they are required to perform any kind of unclean work.

A room separate and apart from the workshop where substances (specified in the law) considered dangerous to health are used or handled by employees in harmful quantities, must be provided, and equipped with a lavatory containing a sufficient number of basins or spigots. Hot and cold water, soap, individual towels, etc., must be supplied. Compartment lockers required for employees' clothing.

Male and female employees must be provided for separately.

Toilets - Manufacturing, mechanical, mercantile, and other establishments employing persons of both sexes must provide separate water closets for them.

Factories employing 3 or more persons, or workshops employing 3 or more children, young persons, or women, must provide a sufficient number of proper toilet accommodations, reasonably accessible for employees' use. Separate accommodations for each sex must be provided, plainly designated, where both sexes are employed.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female permitted to enter any mine to work therein.

No woman or minor shall be required to clean any part of the mill, gearing or machinery while it is in motion.

No woman shall be required to work between the fixed and traversing, or the traversing parts of any machine in motion by the action of any mechanical power except the machine she is operating.

Industrial Homework - Covers the manufacture of any wearing apparel, purses, feathers, artificial flowers or other goods for male or female wear in any room or apartment in any tenement or dwelling house.

Not more than 3 persons besides the immediate members of the family living in the place where homework is done may be employed on homework.

Employer required to keep record of names and addresses of homeworkers, also contractors employed by him.

Articles found to have been made by homework in violation of the homework law, or under unclean or unhealthy conditions shall be conspicuously labelled by the official inspector as "tenement made" or "made under unhealthy conditions."

Maternity Leave - For 3 weeks before, and 3 weeks after, childbirth, it is unlawful for any person, firm or corporation knowingly to employ, or permit to be employed, a female in manual, physical, stenographic or clerical work of any character, in any manufacturing, mechanical, or mercantile establishment, factory, workshop, laundry, bakery, restaurant, any place of amusement, express, transportation or public utility business, common carrier, or public institution.

Wartime Provisions - None.

MONTANA

Hours of Work

(1) Daily - Maximum, 8 hours in 24.
Weekly - No law.

Coverage - (Females). Manufacturing, mechanical, or mercantile establishments, telephone exchange rooms or offices, telegraph offices, laundries, hotels, or restaurants.

Variations - Law provides that females in retail stores may work up to 11 hours in any one day for the week immediately preceding Christmas Day, but this provision repealed by subsequent adoption of constitutional amendment setting maximum 8-hour day for all employees in all industries, in opinion of State attorney general.

(2) Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (All employees). Retail stores; restaurants, cafes, lunch counters, or other commercial eating establishments.

Variations - Overtime permitted in eating ~~places~~ for purpose of relieving another employee in case of sickness; if health of public is imperiled or life or property endangered, or for any unforeseen causes.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Employers in manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, or other establishments must provide suitable seats for their female employees and permit use of the seats when employees are not on active duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No law.

MONTANA - ~~Cont'd.~~

Dec 15, 1944

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No Law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

Equal Pay

Stipulated

En Pay

Madame

Course — [illegible]

[illegible]

[illegible]

[

SUMMARY - BY STATES

MONTANA

Hours of Work -

(1) Daily - 8 hours in 24.

Weekly - No law.

Coverage - (Females), Manufacturing, mechanical, or mercantile establishments, telephone exchange rooms or offices, telegraph offices, laundries, hotels, or restaurants.

Exemptions - No specific exemptions.

Variations - Females in retail stores may work up to 10 hours in any one day for the week immediately preceding Christmas day.

Day of Rest - No special provision for women.

Night work - No law.

Meal and Rest Periods - No law.

Night work - No law.

Plant facilities

Seating - Employers in manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, or other establishments must provide suitable seats for their female employees and permit use of the seats when employees are not on active duties.

Lunchrooms - No law.

Dressing and Rest Rooms - No law.

Toilets - No law.

Weight Lifting and other conditions of work - No law.

(2)

MONTANA

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime ~~exemptions~~ - ~~No special law affecting women's employment.~~

Minimum Wage

No Law.

Women's Bureau
Department of Labor
Washington

August 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

NEBRASKA

Hours of Work

Daily - Maximum 9 hours.
Weekly - Maximum 54 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishment, laundry, hotel, restaurant, or office in metropolitan cities and cities of the first class.

Exemptions - Public service corporations.

Variations - Plants processing seasonal agricultural products may employ women 11 hours a day in emergency periods not to exceed 20 days at any one time if permit is obtained from labor commissioner.

Day of Rest - No law.

Meal and Lunch Periods.

Not less than ½ hour for lunch. Employee must be free to leave work premises.

Coverage - (All employees). Assembling plant, workshop, or mechanical establishment.

Night Work.

(1) Employment prohibited during the period from 1 a.m. to 6 a.m.

Coverage - (Females 16 and over). Offices in metropolitan cities or cities of the first class.

Exemption - Public service corporation; banks (by Attorney General's opinion).

(2) Employment permitted during the period from 1 a.m. to 6 a.m. if the employer obtains permit from the labor commissioner.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishments, laundries, hotels, or restaurants in metropolitan cities or cities of the first class.

Exemption - Public service corporation.

Plant Facilities

Seating.

Every agent, proprietor, superintendent, or employer of female help must provide a chair, stool or seat for each female employee. Use of the seats must be permitted when sitting does not interfere with the faithful discharge of duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - Separate dressing rooms for women must be provided when the State department of labor requires it in factories, mills, workshops, mercantile or mechanical establishments, or other places where the work necessitates change of clothing.

Toilets, Etc.

Factories, mills, workshops, mercantile or mechanical establishment or other building where persons are employed, must provide for the reasonable use of employees a sufficient number of toilets, in the ratio of at least 1 toilet for every 20 employees of either sex. If both males and females are employed, separate toilets, plainly designated, must be supplied for each sex.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

No law.

NEBRASKA

Hours of Work

Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Females 16 and over) Manufacturing, mechanical, or mercantile establishment, laundry, hotel, restaurant, or office in metropolitan cities and cities of the first class.

Exemptions - Public service corporations; banks (by Attorney General's opinion).

Variations - Plants processing seasonal agricultural products may employ women 11 hours a day in emergency periods not to exceed 20 days at any one time if permit is obtained from labor commissioner.

Day of Rest - No law.

Meal and Lunch Periods - Not less than ½ hour for lunch. Employee must be free to leave work premises.

Coverage - (All employees) Assembling plant, workshop or mechanical establishment.

Night Work - Prohibited for the period from 1 a.m. to 6 a.m. in offices in metropolitan cities or cities of the first class.

Exemptions - Public service corporation, banks (by Attorney General's opinion).

Employment permitted during the period of 1 a.m. to 6 a.m. only if the employer obtains permit from the labor commissioner.

Coverage - (Females 16 and over) Manufacturing, mechanical, or mercantile establishments, laundries, hotels, or restaurants, in metropolitan cities or cities of the first class.

Exemptions - Public service corporation.

Plant Facilities

Seating - Every agent, proprietor superintendent, or employer of female help (~~including girls~~) must provide a chair, stool or seat for each female employee. Use of the seats must be permitted ~~when~~ when sitting does not interfere with the faithful discharge of duties.

Lunchrooms - No law.

Dressing and Restrooms - Separate dressing rooms for women must be provided when the State Department of Labor requires it ~~in the case of~~ Factories, mills, workshops, mercantile or mechanical establishments, or other places where the work necessitates change of clothing.

Toilets - Factories, mills, workshops, mercantile or mechanical establishment or other building where persons are employed, must provide for the reasonable use of employees a sufficient number of toilets, in the ratio of at least 1 toilet for every 20 employees of either sex. If both males and females are employed, separate toilets, plainly designated, must be supplied for each sex.

~~See also Chart No. [illegible] as to Sanitation.~~

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - None

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

NEVADA

Hours of Work

Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females 18 and over). Private employment.

Exemptions - Domestic service; State, county, city, or town employees.

Variations - 12-hour day and 56-hour week, 7-day week allowed in the event of illness of the employer or other employees, or unforeseen temporary increase in business, if time and a half paid for hours over 8 a day or 48 a week.

See also Wartime Provisions.

Day of Rest.

A 6-day week established for employees and employments covered by Hours of Work law. See also Wartime Provisions.

Meal and Rest Periods.

At least ½ hour for meals for female employees 18 years and over.

Coverage - (Females). Employments covered by Hours of Work law.

Variations - See Wartime Provisions.

Night Work - No law.

Plant Facilities

Seating.

Manufacturing, mechanical, or mercantile establishments, laundry, hotel, restaurant or other establishments must provide suitable seats for all females, and permit employees to use the seats when not engaged in the active duties of their employment.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms.

Employers of 5 or more males and 3 or more females must provide separate toilet rooms for each sex, plainly designated. Employers located in office buildings where toilet rooms for each sex are reasonably accessible within the building are exempted, as are employers of domestic workers in homes or residences.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

During the present war, hour limitations not applicable to employees of a common carrier for hire or by the communication industry.

Minimum Wage

Authority.

Statute sets rates.

Coverage.

(1) Employees - Any female.

(2) Industries or Occupations - Private employment, except domestic service.

Orders.

None.

Equal Pay

No law.

SUMMARY - BY STATES

NEVADA

Hours of Work,

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 18 and over) Private employment.

Exemptions - Domestic service; State, county, city, or town employees.

Variations - 12-hour day and 56-hour week allowed in the event of illness of the employer or other employees, or unforeseen temporary increase in business, if time and a half paid for hours over 8 a day or 48 a week.

See also Wartime Provisions.

Day of Rest - 6-day week established. ~~for employees and employments~~ covered by the Hours of Work law. See also Wartime Provisions.

Meal and Rest Periods - At least ½ hour for meals ~~for females employees 18 years and over.~~

Coverage - ~~All exemptions and variations~~ Employments covered by Hours of Work law.

~~See also~~ Wartime Provisions.

Night Work - No law.

Plant Facilities

Seating - Manufacturing, mechanical, or mercantile establishments, laundry, hotel, restaurant or other establishments must provide suitable seats for all females, and permit employees to use the seats when not engaged in the active duties of their employment.

Lunchrooms - No law.

Toilets - Employers of 5 or more males and 3 or more females ~~in the same building or on the same premises,~~ must provide separate ~~lavatories~~ or toilet rooms for each sex, plainly designated.

~~Exemptions~~ - Employers located in office buildings where ~~lavatories~~

NEVADA

of toilet rooms for each sex are reasonably accessible within the building, domestic employees in homes or residences.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law

Maternity Leave - No law.

Wartime Provisions - During the present war, hour limitations not applicable to employees of a common carrier for hire or by the communication industry.

Minimum Wage

Outline of Statute

Purpose

Employees - Employers

Definitions

Penalty

Orders

No

intro

NEW HAMPSHIRE

3 pp

Hours of Work

(1) Daily - Maximum, 10 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females). Manual or mechanical labor in any manufacturing establishment.

Variations - 10½ hours a day, 54 hours a week, may be worked during 8 weeks in any 6-month period if license granted by labor commissioner after hearing.
See also Wartime Provisions.

(2) Daily - Maximum, 10½ hours.
Weekly - Maximum, 54 hours.

Coverage - (Females). Manual or mechanical labor, in any employment other than manufacturing.

Exemptions - Household labor; nursing; domestic, hotel, and cabin labor, including dining and restaurant service; boarding-house labor; operators in telegraph and telephone offices; farm labor; canning of perishable fruits and vegetables.

Variations - For the 7-day period immediately preceding Christmas Day, regular employees in mercantile establishments may work overtime, but the weekly average may not exceed 54 hours.

If following a hearing a special license is granted by the labor commissioner, laundries may employ their workers up to 60 hours a week for 3 months of the year. Daily hours may not be exceeded.
See also Wartime Provisions.

Day of Rest.

(All employees) A 6-day week established in manufacturing or mercantile establishments, commercial occupations, industrial processes, transportation, and communications.

Exemptions - Numerous public-service establishments, utilities, and specified occupations.

Variations - See Wartime Provisions.

Meal and Rest Periods - No law.

Night Work.

If any work is performed between 8 p.m. and 6 a.m. on more than 2 nights a week, not more than 8 hours in any 24 or more than 48 hours in any week are permitted.

Coverage - (Females). Manual or mechanical labor in any employment.

Exemptions - Household labor; nursing; domestic, hotel, and cabin labor, including dining and restaurant service; boarding-house labor; operators in telegraph and telephone offices; farm labor; canning of perishable fruits and vegetables.

Variations - Mercantile establishments exempted on the 7 days preceding Christmas Day, provided the weekly average for the year does not exceed 54 hours.
See also Wartime ~~Exemptions~~ Provisions.

Plant Facilities

Seating.

Factories, mills, workshops, or other manufacturing or mercantile establishments must provide suitable seats for the use of their female employees. Employees are to be permitted to use the seats when not necessarily engaged in their active duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms.

Factories, mills, workshops or other manufacturing establishments, or mercantile establishments, regularly employing 3 or more persons, must provide reasonable and proper toilet facilities, and maintain reasonably sanitary and hygienic conditions for employees.

Regulations covering these establishments provide that when both sexes are employed separate compartments and toilet rooms must be provided for each sex, plainly designated. Ratio of toilet facilities: At least 1 seat to every 25 employees or fraction of that number. Standards of construction and maintenance set out in regulations.

Requirements exist also for adequate washing facilities, with special provision for employees exposed to poisonous or irritating work materials.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

When the country is at war with any other nation the hour law does not apply to labor performed entirely in the manufacture of munitions or supplies for the United States or the State.

The Governor is given broad powers to suspend the operation of any statute or order that might hinder the war effort.

Minimum Wage

Authority.

Labor commissioner issues order, based on recommendations of wage board as to minimum rates for occupation.

Coverage.

(1) Employees - Women, minors.

(2) Industries or Occupations - Any, except domestic service and farm labor.

Orders.

		Effective Date
Hosiery and Knit Goods (Directory)	~~Effective~~	May 1, 1937
Clothing and Accessories (Mandatory)		Oct 1, 1937
Laundry (Mandatory)		July 1, 1938
Restaurant (Mandatory)		Nov 1, 1938
Dry Cleaning (Directory)		May 20, 1940
Retail Trade (Mandatory)		Jan 6, 1941
Beautician (Mandatory, revised)		Feb 2, 1942

SUMMARY - BY STATES

NEW HAMPSHIRE

Hours of Work

(1) Daily - 10 hours. Maximum,
Weekly - 48 hours.

Coverage - (Females; ~~minors under 18~~), Manual or mechanical labor in any manufacturing establishment.

Variations - 10½ hours a day, 54 hours a week may be worked during 8 weeks in any 6-month period if license granted by labor commissioner after hearing.

(2) Daily - 10½ hours. See also Hotels, Restaurants
Weekly - 54 hours. Maximum,

Coverage - (Females; ~~minors under 18~~) Manual or mechanical labor, in any employment other than manufacturing.

Exemptions - Household labor; nursing; domestic, hotel and cabin labor, including dining and restaurant service; boarding-house labor; operators in telegraph and telephone offices; farm labor; canning of perishable fruits and vegetables.

Variations - For the 7-day period immediately preceding Christmas Day, regular employees in mercantile establishments may work overtime, but the weekly average may not exceed 54 hours.

If following a hearing a special license is granted by the labor commissioner, laundries may employ their workers up to 60 hours a week for 3 months of the year. Daily hours may not be exceeded.

See also Wartime ~~Exemptions~~ Provisions.

Day of Rest - 6-day week established for all employees in manufacturing or mercantile establishments, commercial occupations, industrial processes, transportation, and communications.

Exemptions - Numerous public-service establishments, utilities, and specified occupations. ~~See Chart No. — for list.~~

Variations — See Wartime Provisions

Meal and Rest Periods - No law.

Night Work - If any work is performed between 8 p.m. and 6 a.m. on more than 2 nights a week, not more than 8 hours in any 24 or more than 48 hours in any week are permitted.

Coverage - (Females, ~~minors under 18~~). Manual or mechanical labor in any employment.

Exemptions - Household labor; nursing; domestic, hotel, and cabin labor, including dining and restaurant service; boarding-house labor; operators in telegraph and telephone offices; farm labor; mercantile establishments on the 7 days preceding Christmas Day, provided the weekly average for the year does not exceed 54 hours.

Variations — See also Wartime Exemptions.

Plant Facilities

Seating - factories, mills, workshops, or other manufacturing or mercantile establishments, employing 3 or more persons regularly, must provide suitable seats for the use of their female employees. Employees are to be permitted to use the seats when not necessarily engaged in their active duties.

Lunchrooms - No law.

Dressing and Restrooms - No law.

NEW HAMPSHIRE

Toilets, Rooms &c. Factories, mills, workshops or other manufacturing establishments, or mercantile establishments, regularly employing 3 or more persons, must provide reasonable and proper toilet facilities, and maintain reasonably sanitary and hygienic conditions for employees. Commissioner of Labor may make and adopt necessary orders, rules and regulations to give effect

Toilets - Factories, mills, workshops or other manufacturing establishments, or mercantile establishments, regularly employing 3 or more persons, must provide reasonable and proper toilet facilities, and maintain reasonably sanitary and hygienic conditions for employees. Commissioner of Labor may make and adopt necessary orders, rules and regulations to give effect to the health and safety law; he is also empowered to require compliance.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - When the country is at war with any other nation the 8-hour law does not apply to labor performed entirely in the manufacture of munitions or supplies for the United States or the State.

The Governor is given broad powers to suspend the operation of any statute or order that might hinder the war effort.

New Hampshire

Authority — Labor commissioner issues orders based on proposed recommendations of wage boards as to minimum rates for an occupation.

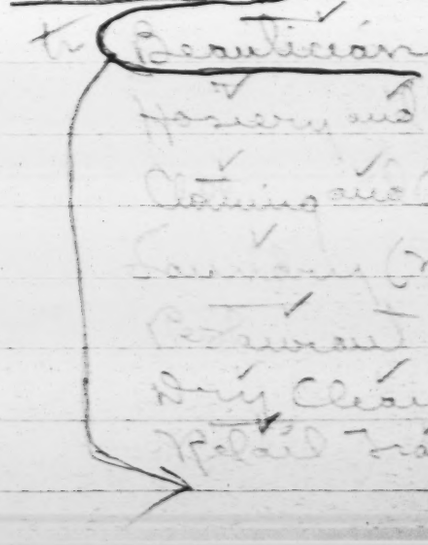
Coverage

Employees - women, minors.

Industries or Occupations

Any occupations, except domestic service and farm labor.

Orders



to Canning (Fruits and Vegetables) - Effective Feb. 2, 1937
Hosiery and Knit Goods - (Directory) - " May 1, 1937
Cleaning and Dressing (Industry) - " Oct. 1, 1937
Canning (Industry) - " July 1, 1938
Retail (Industry) - " Nov 1, 1938
Dry Cleaning - (Directory) - " May 20 1940
Retail - Trade (Industry) - " Jan. 6, 1941

NEW JERSEY

Hours of Work

Daily - Maximum, 10 hours.
Weekly - Maximum, 54 hours.

Coverage - (Females 18 and over). Manufacturing or mercantile establishments, bakeries, laundries, restaurants, or hotels.

Exemptions - Canneries engaged in packing perishable products such as fruits or vegetables.

Variations - In a hotel or other business, the nature of which is continuous, if women's hours of work do not exceed 8 a day, hour provisions do not apply.

Day of Rest.

A 6-day work-week established for employees and employments covered by the Daily and Weekly hours of work law.

Meal and Rest Periods.

At least ½ hour must be allowed for the mid-day meal after 6 consecutive hours of employment on any workday except Saturday.

Coverage - (All employees). Factories, workshops, mills, mines, or places where goods are manufactured.

See also Wartime Provisions.

Variations - If any such place is operated at night or in 8-hour shifts, the meal period must be fixed with regard to the mutual interests of employer and employee.

Night Work.

Coverage - (Females 18 and over). Employment prohibited for period of 12 midnight to 7 a.m. Manufacturing establishments, bakeries, or laundries.

Exemptions - Canneries engaged in packing perishable products, such as fruits or vegetables, or in glass manufacturing establishments.

Variations - See Wartime Provisions.

Plant Facilities

Seating.

Suitable seats, conveniently situated, must be provided for female employees in manufacturing, mechanical, or mercantile establishments or in services or operations incidental to any commercial employment. Use of

seats must be permitted except when employee is engaged in duties that cannot properly be performed in a sitting position.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Suitable and convenient washrooms must be provided for each sex employed in factories, workshops, or mills. Mercantile establishments must provide these accommodations if ordered to do so by the labor commissioner.

A place for workers to change from street to work clothing must be provided in mercantile establishments, factory, workshop, or mill. Where employees work with poisonous or ~~injurious~~ substances such room must be separate from but connected with workroom and supplied with lockers.

Toilet Rooms.

Suitable water closets conveniently located must be supplied in mercantile establishments, factories, workshops, or mills, separately for each sex in ratios ranging from 1 for 20 workers where 100 or fewer employed on ~~shift~~ to 1 for 40 where 1,000 to 5,000 employed. Toilets for women must have separate approaches.

Other Regulations

Weight Lifting and Other Conditions of Work. No female of any age is permitted to handle any dry substance or dry compound containing lead in any form in excess of 2 per cent.

Prohibited Occupations.

Females are not to be employed in the manufacture of nitro and amido compounds except in the office, works hospital, or welfare room or building.

Industrial Home Work.

Law covers manufacture in a home of materials or articles for an employer, and thereafter returned to him, not for the personal use of himself or of a member of his family, but exempts the employment of a tailor or seamstress for work on any articles of wearing apparel for an employer for himself or his family.

The law prohibits manufacture in a home of articles of food or drink; articles for use in the serving of food or drink; toys and dolls, tobacco, drugs and poisons; bandages and other sanitary goods; explosives, fireworks and articles of like character; articles of children's and infants' wearing apparel; articles which in processing require exposure of worker to hazardous substances; manufacture or distribution of dolls' clothing.

Permit, renewable annually, is required for employers, also for independent contractors. The fee is $50. Renewal fees are $50 to $200, according to

number of home workers employed.

Certificate, issued free, annually, must be held by each home worker, not transferrable ~~nor to~~ on change of address.

Home worker must be at least 16 years of age, and free of communicable disease; must live in the home in which the work is done. The home must be clean, sanitary, and free from communicable disease.

Home workers are subject to the same regulation of wages, hours, or working conditions as that established for labor in factories or business by employees of the same age and sex groups.

Commissioner of labor may prohibit general home work in an industry if it is found injurious to the worker's health and welfare or detrimental to labor standards set for factory workers. Exception may be made in such cases for handicapped workers.

Employers must provide accurate records of home workers, workplaces, distributed articles or materials, individual earnings, completed products, and affiliated contractors. Finished products must be conspicuously labelled showing employer's name and address in legible English. Home workers may not exceed one-third of the employer's factory workers.

Wartime Provisions

During the present war, the Governor on his own order or on application to him, may suspend provisions regarding meal period for a particular mining or manufacturing plant and for a particular period of time. Before the order is granted, Governor must have ascertained that suspension will not impair or endanger health or productive effectiveness of employees. In no case may more than 8 hours be worked without a meal period.

In time of war or other serious National emergency, the Governor may suspend restrictions of the night-work law for women. Suspension order must be limited to a particular manufacturing plant and to a particular period of time.

~~Minimum Wage~~

NEW JERSEY

Dec. 15, 1944

Minimum Wage

Authority.

Commissioner of labor issues mandatory order, based on recommendations of wage board as to minimum rates for an occupation.

Coverage.

(1) Employees - Women; minors.

(2) Industries or Occupations - Any, except domestic service, farm labor, employment in a hotel.

Orders.

Laundry ~~Effective~~	July 11, 1938 & Elective date
Cleaning and Dyeing ~~Effective~~	May 6, 1940
Light Manufacturing	July 15, 1940
Weaving apparel ~~Effective~~	Dec. 1, 1942
Beauty culture	Jan. 10, 1943
Restaurant	Aug. 13, 1943

(modified)

SUMMARY - BY STATES

NEW JERSEY

Hours of Work

Daily - 10 hours.

Weekly - 54 hours.

Coverage - (Females 18 and over). Manufacturing or mercantile establishments, bakeries, laundries, restaurants, or hotels.

Exemptions - Canneries engaged in packing perishable products such as fruits or vegetables.

Variations - In a hotel or other business, the nature of which is continuous, if women's hours of work do not exceed 8 a day, hour provisions do not apply.

Day of Rest - 6-day work-week established for employees and employments covered by the hours above.

Meal and Rest Periods - At least ½ hour must be allowed for the mid-day meal after 6 consecutive hours of employment on any workday except Saturday.

Coverage - (All employees). Factories, workshops, mills, mines, or places where goods are manufactured. If any such place is operated at night or in 8-hour shifts, the meal period must be fixed with regard to the mutual interests of employer and employee.

See also Wartime Provisions.

Night Work - Prohibited for period of 12 midnight to 7 a.m. Females 18 and over employed in manufacturing establishments, bakeries, or laundries. Does not apply to this group of employees in canneries engaged in packing perishable products, such as fruits or vegetables, or in glass manufacturing establishments.

Variations - See also Wartime Provisions.

Plant Facilities

Seating - Suitable seats, conveniently situated, must be provided for female employees in manufacturing, mechanical, or mercantile establishments or in services or operations incidental to any commercial employment. Use of seats must be permitted except when employee is engaged in duties that cannot properly be performed in a sitting position.

Lunchrooms - No law.

Dressing and Restrooms - ~~sufficient,~~ suitable, and convenient washrooms must be provided for each sex employed in factories, workshops, or mills. Mercantile establishments must provide these accommodations if ordered to do so by the Labor Commissioner.

Toilet Rooms - ~~a sufficient number of~~ suitable water closets conveniently located must be supplied separately for each sex. Toilets for women must have separate approaches.

~~Exemptions~~ - Mercantile establishments, factories, workshops, or mills,

Weight Lifting and Other Conditions of Work - ~~No law.~~

Prohibited Occupations - Females are not to be employed in the manufacture of nitro and amido compounds.

~~Exemptions~~ - Office, works hospital, or welfare room or building.

No female of any age permitted to handle any dry substance or dry compound containing lead in any form in excess of 2 percent.

Industrial Homework - Covers manufacture in a home of materials or articles for an employer, and thereafter returned to him, not for the personal use of himself or of a member of his family.

NEW JERSEY

[redacted] Employment of a tailor or seamstress for work on any articles of wearing apparel for an employer for himself or his family.

The law prohibits manufacture in a home of articles of food or drink; articles for use in the sewing of food or drink; toys and dolls, tobacco, drugs and poisons; bandages and other sanitary goods; explosives, fireworks and articles of like character, articles of children's and infants' wearing apparel; articles which in processing require exposure of worker to hazardous substances; manufacture or distribution of dolls' clothing.

Permit, renewable annually, required for employers, also for independent contractors. Fee $50. Renewal fees, $50 to $200, according to number of homeworkers employed.

Certificate, issued free, annually, must be held by each homeworker, not transferrable due to change of address.

Homeworker must be at least 16 years of age, and free of communicable disease; must live in the home in which the work is done. The home must be clean, sanitary, and free from communicable disease.

Homework subject to the regulation of wages, hours, or working conditions established for labor in factories or business by employees of the same age and sex groups ~~among homeworkers~~

Commissioner of labor may prohibit general homework in an industry if it is found injurious to the worker's health and welfare or detrimental to labor standards set for factory workers. Exception may be made in such cases for handicapped workers.

Employers must provide accurate records of homeworkers, work places, distributed articles or materials, individual earnings, completed products, and affiliated contractors. Finished products must be conspicuously labelled showing employer's name and address in legible English. Homeworkers may not exceed one-third of the employer's factory workers.

Wartime Provisions

During the present war, the Governor on his own order or on application to him, may suspend provisions regarding meal period for a particular mining or manufacturing plant and for a particular period of time. Before the order is granted, Governor must have ascertained that suspension will not impair or endanger health or productive effectiveness of employees. In no case may more than 8 hours be worked without a meal period.

In time of war or other serious National emergency, the Governor may suspend restrictions of the night-work law for women. Suspension order must be limited to a particular manufacturing plant and to a particular period of time.

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MW

Authority of Commissioner
of Labor in matters relating
thereto, based on recommendations of Wage
Board as to minimum rate
for an occupation.

Coverage

(1) Employees - women, minors.

(2) Industries or Occupations -
any establishment, except
domestic service in
hotels, employment in a hotel.

SEE OVER

Meaning of words

(Mandate Effective Dec. 1, 1942
- Effective Jan. 12, 1943
- " Aug. 13, 1943

Penalty section

Restaurant

OVER

Laundry (~~laundries~~) - Effective July 11, 1938

Cleaning and Dyeing " " May 6, 1940

Light manufacturing (~~Industry~~) " July 15, 1945

~~Commercial~~ Local

Women's Bureau
Department of Labor
Washington

January 7, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

NEW MEXICO

Hours of Work

(1) Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females 16 and over). Industrial or mercantile establishments, hotels, restaurants, cafes or eating houses, laundries, offices, places of amusement, and public utility businesses (including express and transportation companies). Also telephone or telegraph offices where hours of work fall between 7 a.m. and 10 p.m.

Exemptions - Interstate commerce where working hours are regulated by Act of Congress; hospitals or sanitariums; registered or practical nurses; midwives; domestic servants; telephone and telegraph establishments employing 5 or fewer females.

Variations - Overtime allowed telephone and telegraph establishments in emergencies resulting from fire, flood, storm, epidemic of sickness, or other like cause. In other industries emergencies, 2 hours of overtime a week may be worked if time and a half is paid for such hours.

(2) Daily - Maximum, 8 hours.
Weekly - Maximum, 54 hours.

Coverage - (Females 16 and over). Telephone and telegraph offices where the hours of work fall between 10 p.m. and 7 a.m.

Exemptions - Establishments employing 5 or fewer females; interstate commerce where working hours are regulated by Act of Congress.

Variation - See above.

Day of Rest - No law.

Meal and Rest Periods.

Not less than ½ hour must be allowed for meal time.

Coverage - (Females). Industrial or mercantile establishments, hotels, restaurants, cafes or eating houses, laundries, offices, places of amusement, telegraph or telephone offices.

Exemptions - Interstate commerce where working hours are regulated by Act of Congress; hospitals or sanitariums, registered or practical nurses, midwives, domestic servants.

Night Work.

Regulated for the period between the hours of 10 p.m. and 7 a.m., for female employees 16 years of age and over, in telephone and telegraph offices. For Daily and Weekly hours of work.

Plant Facilities

Seating.

Employers must provide suitable seats for their female employees, and permit them to use the seats when not engaged in the active duties of their employment, in the following places of employment: Factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, hotels, restaurants, rooming houses, theaters, moving picture shows, barber shops, telegraph or telephone or other offices; express or transportation companies, State institutions, or any other establishment, institution, or enterprise.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms - No Law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female under 21 years of age to be employed as a messenger for a telegraph, telephone or messenger company in the distribution, transmission or delivery of goods or messages, except that during the time the country is at war with a foreign nation and for 6 months thereafter, if such employment is deemed necessary to the war effort, permit certificates allowing such employment may be issued by local school superintendent.

Industrial Home Work - No Law.

Maternity Leave - No law.

Wartime Provisions

See Prohibited Occupations.

Minimum Wage

No law.

SUMMARY - BY STATES

NEW MEXICO

Hours of Work:

(A) Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 16 and over) Industrial or mercantile establishments, hotels, restaurants, cafes or eating houses, laundries, offices, places of amusement, and public utility businesses.

Exemptions - Interstate commerce where working hours are regulated by Act of Congress; hospitals or sanitariums, registered or practical nurses; midwives, domestic servants.

Variations - In emergencies 2 hours of overtime a week may be worked if time and a half is paid for such hours.

Coverage - Telephone or telegraph offices where hours of work fall between 7 a.m. and 10 p.m.

Exemptions - Establishments employing 5 or fewer females; interstate commerce where working hours are regulated by Act of Congress.

Variations - Overtime allowed in emergencies resulting from fire, flood, storm, epidemic of sickness, or other like cause.

(B) Daily - 8 hours.

Weekly - 54 hours.

Coverage - (Females 16 and over) Telephone and telegraph offices where the hours of work fall between 10 p.m. and 7 a.m.

Exemptions - Establishments employing 5 or fewer females; interstate commerce where working hours are regulated by Act of Congress.

Variations - See (A) above.

Day of Rest - No law.

Meal and Rest Periods - Not less than ½ hour must be allowed for meal time.

Coverage - (Females [illegible]). Industrial or mercantile establishments, hotels, restaurants, cafes or eating houses, laundries, offices, places of amusement, telegraph or telephone offices.

Exemptions - Interstate commerce where working hours are regulated by Act of Congress; hospitals or sanitariums, registered or practical nurses, midwives, domestic servants.

Variations - [illegible]

Night Work - Regulated for the period between the hours of 10 p.m. and 7 a.m., for female employees 16 years of age and over, in telephone and telegraph offices. For details, see Hours of Work, (B), [illegible]

Plant Facilities

Seating - Employers must provide suitable seats for their female employees, and permit them to use the seats when not engaged in the active duties of their employment, in the following places of employment:

Factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, hotels, restaurants, rooming houses, theaters, moving picture shows, barber shops, telegraph or telephone or other offices; express or transportation companies, State institutions, or any other establishment, institution, or enterprise where females are employed.

Lunchrooms - No. law.

Dressing rooms and restrooms - No law.

Toilets - No law.

NEW MEXICO

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female under 21 years of age to be employed as a messenger for a telegraph, telephone or messenger company in the distribution, transmission or delivery of goods or messages, except that during the time the country is at war with a foreign nation and for 6 months thereafter, if such employment is deemed necessary to the war effort, the local school superintendent may issue a permit authorizing such employment.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - See Prohibited Occupations, above.

Women's Bureau
U. S. Department of Labor
Washington

~~SUMMARY OF STATE LABOR LAWS - CONFIDENTIAL~~

NEW YORK

Hours of Work

I. Daily - 9 hours.

Weekly - 48 hours.

Coverage - (Females over 18).

1. Factories, that is, mills, workshops, or other manufacturing establishments ~~(For definition of "manufacturing," see Chart No. 1, this subject, Item 1).~~

Exemption - Stenographers and other office workers (by interpretation).

Variations -

(1) In order to have one short day of not more than 4½ hours, 10 hours may be worked on one day in the week, and 9 hours on any of the remaining 4 days, provided the weekly hours do not exceed 48.

(2) Between June 15 and October 15, establishments canning or preserving perishable products, may employ females over 18 for 10 hours a day, 60 hours (6 days) a week. Board of standards and appeals may, after investigation, permit a schedule of 12 hours a day, 66 hours (6 days) a week, between June 25 and August 5.

(3) Between September 1 and December 1, sauerkraut canneries may employ females over 18 for 10 hours a day, 60 hours (6 days) a week.

(2) 8 hours a day, 44 hours a week, or (3) 10 hours on 5 days, 9 hours on any of other days, provided the sixth day does not exceed 4½ hours nor the week 48 hours.

2. (Females over 16), Mercantile establishments; beauty parlors.

Exemptions - Beauty parlors in cities and villages under 15,000 population, and (by interpretation) stenographers and other office workers.

Variations - (1) 10 hours may be worked on 1 day of the week in order to make 1 or more shorter work days in that week. Employer must elect either ~~this or the 8-48 hour~~ schedule, and notify the commissioner of his choice, he may not change schedule more than twice annually. (2) Mercantile establishments are permitted overtime from Dec. 13 to December 24 inclusive and for 2 annual inventory periods. Period ~~s~~ to exceed 1 week's duration; additional hours per period ~~not~~ to exceed 6 under the 8-48 schedule or 5 under the alternate schedule.

3. (Females over 16), Hotels or restaurants (including employees over 18 having the care, custody, or operation of an elevator in these industries).

Exemptions - Females employed solely as singers and performers; resort or seasonal hotels or restaurants in rural communities and in municipalities of less than 15,000 population.

Variations - 10 hours may be worked on 1 day of the week and 9 hours on any of 4 other days, provided the sixth day does not exceed 4½ hours nor the week 48 hours.

4. (Females over 18). Employees having the care, custody, or operation of a freight or passenger elevator.

Exemption - Elevator employees in hotels or restaurants (see last preceding entry).

5. (Females over 21). Conductor or guard on any street surface, electric, subway, or elevated railroad.

New York

II. Daily - No

Weekly - 48 hours.

Coverage - (Females over 21), Messengers for a telegraph or messenger company in the distribution, transmission or delivery of goods or messages.

For emergency variations applicable to all hour law coverage see Wartime Provisions.

Day of Rest -

At least 24 consecutive hours of rest in any calendar week must be allowed to employees.

Coverage - (All employees), Factories, mercantile establishments, hotels, restaurants, freight or passenger elevator operators in any building or place; projectionists or operators of motion-picture machines, engineers and firemen in places where motion pictures are shown; places in which legitimate theater productions, such as dramatic and musical works are shown or exhibited, including performers, engineers, and firemen; building watchmen, janitors, superintendents, supervisors, managers.

Exemptions - Resort and seasonal hotels and restaurants in rural communities and in municipalities of less than 15,000 population; places where motion pictures, vaudeville, or incidental stage presentations, or a combination of these features, are regularly given throughout the week as an established policy (except engineers and firemen), foremen; employees in dairies, creameries, milk condenseries, milk powder factories, milk sugar factories, milk shipping stations, butter and cheese factories, ice cream manufacturing plants, and milk bottling plants, having 7 employees

or less; employees setting sponges in cameries, caring for live animals, maintaining fires, or making necessary repairs to boilers or machinery, if duties include not more than 3 hours on Sunday. Editors or reporters in newspaper offices, and duly licensed pharmacists may be employed 7 days a week. Florists' employees on the day before Easter, Easter Sunday, or December 23 ~~annually~~.

Meal and Rest Periods -

1. At least 1 hour to be allowed for the noon-day meal or midway during a shift of more than 6 hours starting between 1 p.m. and 6 a.m.

Coverage - (all employees) Factories.

2. At least three-fourths hour to be allowed for the noon-day meal or midway during a shift of more than 6 hours starting between 1 p.m. and 6 a.m. An additional meal period of at least one-third hour shall be allowed between 5 p.m. and 7 p.m. if the shift starts before noon and continues after 7 p.m.

Coverage - (all employees) Mercantile or other establishment or occupation covered by the labor law.

3. Not less than 1 hour to be allowed for meals.

Coverage - (Females over 21) Conductor or guard on any street surface, electric, subway, or elevated railroad.

Variations - Commissioner may grant permit for a shorter meal period ~~to any of the establishments or occupations covered. For temporary variations, see Wartime Provisions.~~

Night Work -

Prohibited ~~within the following periods:~~

1. 10 p.m. to 6 a.m., for females over 21, in factories ~~(as defined under Hours of Work.)~~

typists, or bindery workers

ting establishments, cook

rpretation) stenographers

employed in factories

workers.

ercantile establishments,

er offices; duly licensed

e workers.

Variation - Prohibition not applicable to female employees of duly recognized florists on the day before Easter Sunday, on Easter Sunday morning, and on December 23 of each year.

(4.) 12 midnight to 6 a.m., for females over 16, employed in restaurants, (including elevator operators over 18 in this industry).

Exemptions - Females employed solely as singers and performers; attendants in ladies' cloak rooms and parlors; employees in or in connection with dining rooms and kitchens of hotels; hat check, cigarette, or flower girls; resort or seasonal hotels and restaurants in rural communities and in cities of less than 15,000 population.

(5.) 10 p.m. to 6 a.m., for females under 21, employed in hotels or restaurants (including elevator operators over 18 in these industries).

Exemptions - Females employed solely as singers and performers, resort or seasonal hotels and restaurants in rural communities and in cities of less than 15,000 population.

Exemptions - Proofreaders, linotypists, monotypists, or bindery workers in newspaper publishing or commercial printing establishments, book bineries, or pamphlet bineries, (& interpretation) stenographers and other office workers.

(2) 9 p.m. to 6 a.m., for females 16 and under 21 employed in factories

Exemptions - Stenographers and other office workers.

(3) 10 p.m. to 7 a.m., for females over 16, in mercantile establishments, barber beauty parlors.

Exemptions - Writers or reporters in newspaper offices; duly licensed pharmacists, stenographers and other office workers.

Variation - Prohibition not applicable to female employees of duly recognized florists on the day before Easter Sunday, on Easter Sunday morning, and on December 23 of each year.

(4) 12 midnight to 6 a.m., for females over 16, employed in restaurants, (including elevator operators over 18 in this industry).

Exemptions - Females employed solely as singers and performers; attendants in ladies' cloak rooms and parlors; employees in or in connection with dining rooms and kitchens of hotels; hat check, cigarette, or flower girls; resort or seasonal hotels and restaurants in rural communities and in cities of less than 15,000 population.

(5) 10 p.m. to 6 a.m., for females under 21, employed in hotels or restaurants (including elevator operators over 18 in these industries).

Exemptions - Females employed solely as singers and performers, resort or seasonal hotels and restaurants in rural communities and in cities of less than 15,000 population.

6. 10 p.m. to 7 a.m., for females over 18, employed in the care, custody, or operation of freight or passenger elevators.

Exemptions - Elevator operators in hotels and restaurants. (Covered by specific provisions. See preceding entries.)

Variations - If elevator is used in connection with a business or industry in which women may be employed before 7 a.m., women may begin work at 6 a.m.

7. 10 p.m. to 6 a.m., for females over 21, employed as conductors or guards on any street surface, electric, subway, or elevated railroad.

8. 10 p.m. to 7 a.m., for females over 21, employed as messengers for a telegraph or messenger company in the distribution, transmission or delivery of goods or messages.

Plant Facilities

Seating - Suitable seats, with backs where practicable, must be provided and maintained in sufficient number for female employees. Use of seats must be permitted to the extent reasonably necessary for the preservation of health.

Exemptions - Factories, mercantile establishments, freight or passenger elevators, hotels, or restaurants.

Mercantile establishments are required to furnish at least 1 seat for every 3 female employees. Seats must be placed where employee's duties are performed.

Factories must allow use of seats whenever employees are at work that can be performed properly in a sitting position.

Passenger elevator for public use must have seat for operator when car is not being used, unless the operator is allowed a one-fourth-hour recess period every 3 hours, in addition to a three-fourths-hour lunch period.

~~Exemption - Elevators in factory buildings or any other buildings having only 1 passenger elevator.~~

Lunch Rooms :

Mercantile establishments employing females must provide a lunch room for their employees. Lunch room may not be located adjacent to a toilet without permit from specified authorities.

A suitable room in which employees may eat must be provided for ~~each~~ work place where local, state, or other ordinances substances or injurious fumes, gases, etc., are present in harmful quantities.

Dressing and Rest Rooms :

Dressing or emergency rooms ~~if required~~ required in factories ~~or canneries where women work~~, mercantile establishments, restaurants, or terminals or car barns where employees of a street, surface, electric, subway, or elevated railroad report for duty, ~~if females are employed~~. At least 1 separate dressing room ~~must be provided if~~ more than 10 females employed. Rooms must be conveniently located. ~~Details of requirements for employees are included in Chart II.~~

~~Location - Portable establishments, or restaurants where less than 5 women are employed and in every terminal or car barn of a street, surface, electric, subway or elevated railroad where less than 5 women employees report for duty.~~

~~Water supply~~ Suitable washrooms adequately equipped, heated, ventilated and lighted, must be provided in convenient locations, for each sex, ~~where females are employed~~. ~~Applicable with exceptions noted~~ Factories, mercantile establishments, restaurants, city offices of a telegraph or messenger companies, stations, terminals, or car barns where women employees of a street, surface, electric,

subway, or elevated railroad report for duty. (Includes facilities for elevator operators in these establishments).

Factories where lead, arsenic, or other poisonous substances, or injurious or noxious fumes, dust, or gases are present, and establishments manufacturing food products, must provide also running hot water, soap, and individual towels.

Toilet Rooms - Suitable water closets must be maintained inside building where employees work unless the board of standards and appeals determines that this is impracticable. Where both sexes are employed, separate water closets, compartments, or toilet rooms must be provided for each sex and plainly designated. Location must be conveniently available, ~~for toilet rooms~~ ratio of installations to number of employees, ~~same as Chapter II, Section 3~~.

Coverage - Same as for Wash Rooms.

Weight Lifting and Other Conditions of Work

1) No female to be employed in operating or using any emery, tripoli, rouge, corundum, stone, carborundum, or any abrasive, or emery polishing or buffing wheel, where articles of the baser metals or iridium are manufactured.

Exemptions - Females over 21 years of age may be employed in operating such wheels for wet grinding under conditions specified by the rules of the board of standards and appeals.

2) No female to be employed in the basement of a mercantile establishment or restaurant unless a permit is granted by the Commissioner - permit granted only if the basement is sufficiently lighted, ventilated, and sanitary.

(3) No female under 21 years of age to be employed or directed to clean machinery while it is in motion.

(4) No female to be employed in a foundry at or in connection with core-making, if work-space is in the same room with the oven.

~~Exception~~ - Employment permitted if oven gases and fumes are effectively shut off from work space by properly-constructed partition.

(5) No female to be permitted to make or handle foundry cores if total weight of core, box, and plate exceeds 25 pounds; nor if cores are above 110° F. in temperature.

Prohibited Occupations

(1) No female to be employed in or in connection with a mine or quarry.

(2) No female under 21 to be employed as conductor or guard on any street surface, electric, subway, or elevated railroad.

(3) No female under 21 to be employed as messenger for a telegraph or messenger company in distributing, transmitting, or delivering goods or messages.

Industrial Home-Work

Coverage - Manufacture in a home in whole or in part with materials furnished by an employer of any article or articles to be returned to him, not for the personal use of himself or for a member of his family.

Work prohibited by statute - No article of food, no dolls or dolls' clothing, and no stuffed animals or other stuffed toys used in the same way as dolls, may be manufactured in a home for a factory either directly or through a contractor or for an employer.

Powers of Commissioner - The commissioner of labor may prohibit home work within an industry if it unduly jeopardizes wages and working conditions or injures health and welfare of home workers. He may also restrict the granting of licenses and permits, and issue rules and regulations to control industrial home work in the permitted industries. See Prohibiting Orders below.

Licensing - Employer required to have permit before delivering any industrial-home-work materials for manufacture. Renewable annually. Fees, $25 to $100, graduated according to number of home workers employed.

Home worker must hold certificate authorizing the work to be done in the home where he lives. No fee required. Certificate must be posted in the work place.

A person who is at least 16 years of age, and living in the home where the work is done, may be granted a home worker's certificate.

Employer's duties - Must furnish as required an accurate list of his home workers, places of work, materials furnished, articles completed, and wages paid each home worker.

Label bearing employer's name and address in legible English must be attached by him to all home-work materials.

Distribution of all materials and articles of home work must be direct from employer to home workers, and not through contractors.

Prohibiting Orders of Commissioner:

Order No. 1 - Forbids all home work (except by handicapped persons) ~~as previously~~ in the manufacture, processes and transactions involved in the manufacture of men's and boys' outer clothing, as defined.

~~[illegible]~~ Permitted employment restricted thus: (1) Employer must have been licensed to distribute home work prior to April 25, 1936. (2) Home worker must have held home-work certificate to work for the same employer prior to April 25, 1936, must be protected by workmen's compensation insurance, must be over 60 years of age, and have a physical disability that prevents his doing the same work in a shop; may work for one employer only at any one time. (3) Home worker must be paid at least the same piece-work rate as that paid to workers on the same or similar operations in employer's factory. (4) Employer must keep, as part of his pay roll, a complete record of the dates on which work is distributed, style and amount of work given out, rate of pay, date of return of work, amount of work returned, and total weekly payments. (5) Home worker must record wages and production in a handbook issued by the commissioner of labor. (6) Employer must provide free distribution and collection of home work among his home workers.

Order No. 2 - Forbids home work in men's and boys' neckwear industry as defined (except by handicapped persons, i.e., persons unable to adjust to factory work because of age, those physically or mentally disabled for factory work, or those who cannot leave home because of essential care of an invalid in the home).

Special permits may be granted to employers and home workers if applicant as home worker received home work prior to February 3, 1937, from an employer licensed prior to that date; home worker must be protected by workmen's compensation insurance. Employer must be operating a factory where one or more employees do the same work as assigned to the home worker.

Factory rates must be paid for similar home-work operations.

The amount of work assigned may not exceed that done in the same week on the same processes by shop workers employed within the legal hours of work for women.

Certificate to home worker permits work only for the one employer listed on it.

Records and Distribution provisions similar to those of Order No. 1, except that the employer must make the entries in the home worker's handbook.

Order No. 1. - Forbids home work in the artificial flower industry except by handicapped workers under special permit. Prohibits home work in the feather industry.

Employers and home workers in the artificial flower industry must obtain special permits and certificates; must have held home work permits prior to March 10, 1938.

Employers must maintain a factory in which persons are employed on flower-making operations similar to those done by home workers.

Home workers must be covered by workmen's compensation insurance.

Persons eligible for home work only if unable to do factory work because of age or physical or mental disability, or because of the essential care of an invalid in the home.

Home worker may be employed only for the one employer listed on the certificate; may not be employed as a factory worker while in possession of a home-work certificate.

Provisions same as for Order No. 2, relating to amount of work assigned, rates of pay, record-keeping, and distribution.

Order No. 4 - Forbids home work in the glove industry, except by handicapped persons under special permits. (Exempts employers engaged solely in the dyeing or cleaning of used gloves).

Special permits restrict to persons licensed to do home work in this industry before April 1, 1941, who are unable to do factory work because of age or physical or mental disability, or because of essential care of an invalid in the home.

Employer not to distribute home work except to a person holding a home worker's certificate issued to him to work for that employer, and employer may obtain his permit if he held a permit to distribute home work in the glove industry prior to April 1, 1941. Home worker must be protected by workmen's compensation insurance.

Provisions same as for Order No. 2, regulating the amount of work assigned, rates of pay, records, distribution and collection.

Maternity Leave

No owner, manager, foreman, or other person in authority shall knowingly employ a female or permit her to be employed in a factory or mercantile establishment for a period of 4 weeks after childbirth.

Wartime Provisions

The industrial commissioner and, on appeal, the board of standards and appeals, are empowered to act at their discretion to prevent peacetime restrictions in the labor laws from hampering essential war work.

Action may include, upon application of an employer engaged in war work and careful investigation, (1) authorization of employment on a 7-day basis, (2) authorization of employment on a multiple-shift basis, (3) waiver of such other provisions of law as may restrict operation or Hours of employment.

OVER

Coulommiers (Marne)
Restaurant
Hôtel

Permits to employers are to be granted only upon due consideration of the health and welfare of workers as well as the need of adjusting State labor policy to wartime requirements.

The act authorizing dispensations expires July 1, 1945.

A differential in pay between employees based on a factor or factors other than sex shall not constitute discrimination.

NORTH CAROLINA

Hours of Work

(1) Daily - Maximum, 9 hours.
Weekly - Maximum, 48 hours.

Coverage - (Female 18 and over). Any occupation, except as noted.

Exemptions - Laundries and dry-cleaning establishments; seasonal industries in the process of conditioning and preserving perishable or semiperishable commodities; employers of not more than 8 persons in each place of business; ice plants; cotton gins and cottonseed oil mills; motion picture theaters; seasonal hotels and club houses; commercial fishing or tobacco redrying plants; tobacco warehouses; hotels; agricultural work; domestic service in private homes and boarding houses; charitable institutions and hospitals; railroads, common carriers and public utilities under jurisdiction of Interstate Commerce Commission, or the State Utilities Commission; municipally-operated utilities, or transportation agencies now regulated by the Federal Government; work of persons over 18 in bona fide office, foremanship, clerical, supervisory jobs; executive positions; learned professions; commercial travellers; and public employees.

Variations - Ten hours a day may be worked in mercantile establishments during two 1-week inventory periods annually and from December 18 to 24, inclusive. Unlimited overtime permitted for florists and florists' employees for one week prior to, and including, Easter, Mother's Day, and Christmas.
See also Wartime Provisions.

(2) Daily - Maximum, 10 hours.
Weekly - Maximum, 55 hours.

(a) Coverage - (Females 18 and over). Retail or wholesale mercantile establishment or other business where females are employed to serve the public as clerks, salesladies, or waitresses, and other employees of public eating places.

Exemptions - Full-time bookkeepers, cashiers, or office assistants; establishments with not more than 3 employees at any one time.

(b) Coverage - (Females). Seasonal industries in the process of conditioning and preserving perishable and semiperishable commodities.

(3) Daily - Maximum, 11 hours.
Weekly - Maximum, 55 hours.

Coverage - (Women 18 and over). Laundries, drycleaning establishments, pressing clubs, workshops, factories, manufacturing establishments, or mills.

Exemptions - Seasonal industries engaged in conditioning and in preserving perishable or semiperishable commodities; agricultural work.

Variations - Unlimited overtime permitted for florists and florists' employees for one week prior to, and including, Easter, Mother's Day, and Christmas.

Day of Rest.

One day of rest in any period of 7 consecutive days.

Coverage - (Females). See Daily and Weekly Hours of Work - (1).

Meal and Rest Periods.

An interval of at least 1/2 hour must be allowed after 6 consecutive hours of employment, except where the terms of employment do not call for more than 6 1/2 hours in any 1 day or period.

Coverage - See Daily and Weekly Hours of Work (2).

Night Work - No law.

Plant Facilities

Seating.

Employers of females in stores, shops, offices, or manufacturing or other businesses must provide proper and suitable seats for all such employees, and permit them to use the seats when not actively engaged in their duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms.

Employers of both sexes in manufacturing, or in any other business employing more than 2 males and females in municipalities of at least 1,000 population, whose employees do chiefly indoor work, must provide separate and distinct toilet rooms for each sex, plainly marked, and kept clean.

NORTH CAROLINA

Feb. 15, 1944

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

~~Maternity Leave - No law.~~

Wartime Provisions

In accordance with the Emergency War Powers Act (1943) the Governor, with the approval of the Council of State, has issued proclamations, two of which modify for the war period that provision of the statute which limits the number of hours women and minors may work.

Proclamation No. I (May 6, 1943) empowers the commissioner of labor to grant permission, on request of the War or Navy Department, to relax statutory hour standards for women's employment "in an emergency situation."

Proclamation No. III (August 3, 1943) permits employment of women (18 and over) for 10 hours a day, but within a 48-hour week.

Time and a half rates applied under both proclamations.

Minimum Wage

No law.

SUMMARY - BY STATES

NORTH CAROLINA

Hours of Work -

1. Daily - 9 hours.

Weekly - 48 hours.

Coverage (Females over 16) - Any occupation, except as noted under "Exemptions."

Exemptions - Laundries and dry-cleaning establishments; seasonal industries in the process of conditioning and preserving perishable or semi-perishable commodities; employers of not more than 5 persons in each place of business; ice plants, cotton gins, cottonseed oil mills, motion picture theaters, seasonal hotels and club houses, commercial fishing or tobacco redrying plants, tobacco warehouses, hotels, agricultural work, domestic service in private homes and boarding houses, charitable institutions and hospitals; railroads, common carriers and public utilities under jurisdiction of Interstate Commerce Commission, or the State Utilities Commission; municipally-operated utilities, or transportation agencies now regulated by the Federal Government; work of persons over 18 in bona fide office, foremanship, clerical, supervisory jobs, executive positions, learned professions, commercial travellers, and public employees, outside salesmen on commission basis.

Variations - Ten hours a day may be worked in mercantile establishments during two 1-week inventory periods annually and from December 18 to 24, inclusive. Unlimited overtime per-

mitted for florists and florists' employees ~~(retail or wholesale) annually~~ for one week before, and including Easter, Mother's Day, and Christmas.

2) Daily - 10 hours.

Weekly - 56 hours

Coverage - (females). Retail or wholesale mercantile establishment or other business where females are employed to serve the public as clerks, saleslades, or waitresses, and other employees of public eating places.

Exemptions - Full-time bookkeepers, cashiers, or office assistants; establishments with not more than 3 employees at any one time.

3) Daily - 11 hours.

Weekly - 56 hours.

Coverage - (Women ~~over 16~~) Laundries, ~~(by agreement with State Department of Labor, observe a 10-hour day)~~ dry-cleaning establishments, pressing clubs, workshops, factories, manufacturing establishments, or mills.

Exemptions - Seasonal industries engaged in conditioning and in preserving perishable or semi-perishable commodities; agricultural work.

Variations - Unlimited overtime permitted for florists and florists' employees ~~(retail or wholesale)~~ for one week ~~annually~~ prior to, and including, Easter, Mother's Day, and Christmas.

Day of Rest -

One day of rest in any period of 7 consecutive days.

Coverage - (~~women over 21~~). See ~~item (1) under~~ Hours of work ~~above~~.

~~Limitation - 7 days of work authorized for telegraph operators and clerks in offices employing 3 or less persons.~~

Meal and Rest Periods - An interval of at least 1/2 hour must be allowed after six hours of ~~continuous~~ employment ~~at any one time~~, except where the terms of employment do not call for more than 6 1/2 hours in any 1 day or period.

Coverage - See ~~item (2) in sec.~~ Hours of Work ~~above~~.

Night work - No law.

Plant Facilities -

Seating - Employers of females ~~as clerks, operatives, or helpers in any business, trade, or occupation~~ must provide proper and suitable seats for all such employees, and permit them to use the seats when not actively engaged in their duties.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilets - Employers of both sexes in manufacturing, or in any other business employing more than 2 males and females in municipalities of at least 1,000 population, whose employees do chiefly indoor work, must provide separate and distinct toilet rooms for each sex, plainly marked, and kept clean.

Weight lifting and other conditions of work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime provisions - The Emergency War Powers Act (1943) empowers the Governor, on certification of the Commissioner of Labor, to suspend labor laws, rules and regulations, if required in furtherance of the war effort and as a measure of national protection. Increased hours over the statutory limit must be adequately compensated.

Under this authority, Governor's Proclamation No. I (May 6, 1943) empowers the Commissioner of Labor to grant permission, on request of the armed services, to relax statutory hour standards for women's employment "in an emergency situation."

Also, Governor's Proclamation No. 2 (August 3, 1943) permits employment of women (18 and over) for 10 hours a day, but within a 48-hour week.

Time and a half rates applied under both proclamations.

Minimum Wage

SUMMARY - BY STATES

NORTH DAKOTA

Hours of Work

(1) Daily - 8½ hours.

Weekly - 48 hours.

Coverage - (Women 18 and over), Manufacturing, mechanical, or mercantile establishment, laundry, hotel or restaurant, telephone or telegraph establishment or office, or express or transportation company.

Exemptions - Villages or towns of less than 500 population; rural telephone exchanges; small telephone exchanges and telegraph offices if the commissioner after hearing determines that work is too light to justify application of the Act.

Variations - 10-hour day, 7-day week, permitted in emergencies if the weekly hour limit is not exceeded.

"Emergency" is defined to exist in the case of illness of more than 1 female employee; for the protection of human life; in the case of holding of banquets, conventions, celebrations; sessions of the State legislature; or where a female is employed as reporter in any of the courts of the State.

See also Wartime Provisions.

(2) Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Women 18 and over), Mercantile occupations in towns of less than 500 population; that is, work in establishments operated for the purpose of trade in the purchase

or sale of any goods or merchandise, including the sales force, wrapping force, auditing or checking force, shippers in the mail-order department, the receiving, marking and stockroom employees, and all other women.

Exemption - Women who perform office duties solely.

Variations - In case of emergency, temporary suspension or modification may be permitted by department of agriculture and labor.

(3) Daily - 9 hours.

Weekly - 58 hours.

Coverage - (Women 18 and over). Public housekeeping occupations in towns of less than 500 population; that is, the work of waitresses in restaurants, hotel dining rooms, boarding houses; attendants at ice-cream and light-lunch stands and steam-table or or counter work in cafeterias and delicatessens where freshly cooked foods are served; chambermaids in hotels, lodging houses, and boarding houses; janitresses, car cleaners; kitchen workers in hotels, and restaurants; elevator operators.

Hospitals are not subject to regulation as Public Housekeeping establishments, with respect to hours of employment required of female kitchen workers. See State Supreme Court decision, Pokel v. Trinity Hospital Association (1942) _____ North Dakota, _____; 6 NW (2d) 392.

Day of Rest - (1) 6-day week established for women 18 and over employed in establishments covered by ~~Section 1, Hours of Work, above.~~

(2) 28 days of work in any one month established as the maximum for women 18 and over employed in Public Housekeeping Occupations. Defined under ~~Section 3 of~~ Hours of Work.

Meal and Rest Periods

(1) At least ½ hour, free of interruption, must be allowed to employees in Public Housekeeping occupations throughout the State (~~See Section 3, Hours of Work, supra~~), when meals are furnished them on the premises;

At least 1 hour must be allowed when employees must leave premises for meals.

Time for meals eaten on the premises during the working shift considered working time.

No woman to be employed for more than 4 hours of continuous labor without a rest period.

Variations - In an emergency, temporary suspension or modification may be permitted by the department of agriculture and labor.

(2) At least ½ hour must be allowed for the noon meal to women 18 and over employed in manufacturing occupations; that is, all processes in the production of commodities, including work in dressmaking shops, wholesale millinery houses, workrooms of retail millinery shops, and in the drapery and furniture-covering workshops, the garment alteration, art needlework, fur-garment making, and millinery workrooms in mercantile stores; creameries; produce houses; candy making departments of retail candy stores and restaurants; bakery and biscuit-manufacturing establishments; candy manufacturing; book-binding and job-press feeding establishments. No woman shall be employed for more than 5½ hours of continuous labor without a rest period.

Variations - See (1), this subject.

(3) At least ½ hour must be allowed for the noon meal to women 18 and over employed in ~~laundry~~ occupations; that is, all processes connected with the receiving, marking, washing, cleaning, ironing, and distribution of ~~of~~ washable or cleanable materials; work in laundry departments in hotels, hospitals, and factories.

Variations - See ~~Section~~ (1), this subject.

(4.) Adequate meal time at seasonable hours must be given to women 18 and over employed in telephone exchanges.

Night Work (1) Prohibited between 11 p.m. and 7 a.m. for women 18 and over employed as elevator operators.

Variation - In case of emergency, temporary suspension or modification may be permitted by the department of agriculture and labor.

(2.) Prohibited after 9 p.m. for women 18 and over in Mercantile occupations [for list see Section 2 of Hours of Work], without regard to population restrictions.

Variation - See Section (1), this subject.

(3) Prohibited before 6 a.m. for women 18 and over in Laundry Occupations [for list see Section 3, Meal and Rest Periods, above].

Variation - See Section 1, this subject.

Plant Facilities

Seating - Suitable seats must be provided by mercantile establishments. Seats must be accessible, and employees must be permitted to use them to an extent reasonably necessary for preservation of health.

Variation - In emergencies, the department may temporarily suspend or or modify regulations.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms - Suitable, space effectively screened, must be provided for women employees where the nature of the work requires a change to work or street clothing.

Coverage - Public housekeeping, manufacturing, and laundry establishments, if ordered by the labor department.

Rest facilities must be provided for the use of women employees in ~~factories~~ Public housekeeping establishments, mercantile establishments (excluding those which employ fewer than 15 women), and Telephone exchanges (excluding towns of less than 1800 population).

Wash rooms, separate and apart for each sex, must be provided in Public housekeeping and Manufacturing establishments employing 5 or more women. Adequate facilities required.

~~Variations - See this subject under Seating above.~~

Toilets (X) Suitable and convenient toilets, separate from those used by the opposite sex, must be provided for women employees in Public housekeeping, Manufacturing, Mercantile, and Laundry establishments, (See Hours of Work for full occupational coverage).

~~Exemptions - Establishments employing fewer than 3 women except~~ Public housekeeping establishments, ~~for which exemptions may be granted on individual application and hearing.~~

~~(a)~~ (a) Telephone exchanges in towns having a population of 1,800 or more must provide separate toilets for women employees;

~~(b) Telephone~~ exchanges in towns having less than 1,800 population may be ordered to provide adequate accommodations if toilet facilities are found to be unsatisfactory. ~~For other~~ ~~details~~ see Chart _____.

~~Variations~~ - ~~In emergencies, the regulations may be~~ temporarily suspended or modified by the ~~department.~~

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - For the duration of the present war, all female employees (other than those exempted by the War Exemptions Act) may be employed 10 hours a day, 54 hours a week, if time and a half is paid for hours worked in excess of 48 a week.

Exemptions - In addition to those established by the pre-war statute (See Hours of Work section), exemptions are extended to women employed in executive, administrative, supervisory, or professional capacities.

Variations - During emergencies (See Hours of Work for definitions), a 10-hour day or 7-day week schedule may be followed, provided total weekly hours do not exceed 48.

Minimum Wage

Equal Pay

No law.

B. F.

Mexico

North Dakota -

Department of Agriculture
and Labor - issues
orders based on ~~the~~ recommendations
made conferences as to minimum
rates for ~~the~~ different
cities.

~~Colorado~~

(1) Employees - women;

(2) Inspection & Sanitation -
Any ~~employees~~, except
domestic service and
agriculture.

~~Colorado~~

Minnesota - (mandatory) Effective April 1, 1933

Puerto Rico (mandatory) ~~Effective~~ Effective July 1, 1933

Marseilles (mandatory) ~~Sept 17~~ 1932

Education Dept

Dec 16

Fact according to ~~the~~ Members

OVER

1 or 2 Lawyer (mandatory) Dec, 16, 1932

2 Telephone (mandatory) Apr, 4, 1932

SUMMARY - BY STATES

OHIO

Hours of Work

(1) Daily - 8 hours.

Weekly - 45 hours.

Coverage - (Females over 16). Manufacturing establishments.

Exemptions - Females over 21 earning at least $35 a week in bona fide executive positions.

Variations - Hour provisions do not apply during the harvest season to canneries or establishments preparing perishable foods.

(2) Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females over 16). Any employment.

Exemptions - Manufacturing establishments (see preceding entry), agricultural occupations, domestic service in private homes, females over 21 in mercantile establishments and communications companies in cities under 5,000 population; females over 21 earning at least $35 a week in bona fide executive positions; women in the professions of medicine, pharmacy, law, teaching, and social work; professional employees in hospitals, such as graduate and student nurses, anesthetists, technicians, graduate and student dietitians, and internes.

Variations - In mercantile establishments 10 hours may be worked on Saturday and on the day before May 30, July 4, Thanksgiving, Christmas, and New Year's Day; also 10 hours a day and 50 hours a week may be worked during 3 weeks in the year -- 1 week in the first 6 months, and 2 weeks in second 6 months.

Variations - Continued

In laundry and dry-cleaning establishments 9 hours a day and 50 hours a week are permitted during weeks that include New Year's Day, Good Friday, May 30, July 4, Labor Day, Thanksgiving and Christmas.

Hour provisions do not apply to a communications company during emergency periods caused by public disaster.

Over 8 hours a day but not over 48 hours or 6 days a week allowed in financial institutions, including federal reserve and home loan banks, during periods of preparation of financial reports for a Federal or State Government agency.

See also Wartime Provisions.

Day of Rest - 6-day week established for industries and employment covered under "Hours of Work". See also Wartime Provisions.

Meal and Rest Periods - (1) At least 1/2-hour meal period must be allowed after 5 consecutive hours of work. No period of less than 1/2-hour is to be deemed such an interruption.

Coverage - (All females). Any employment, including manufacturing.

Exemptions - See ~~second entry under~~ Hours of Work (2).

(2) In establishments providing lunch rooms, females are entitled to not less than 1/2 hour for meal time. But if a suitable lunch room is not provided, the employees are entitled to at least 1 hour during which they may leave the establishment if they desire.

Coverage - (All females). Factories, workshops, business offices, telephone or telegraph offices, restaurants, bakeries, millinery or dressmaking establishments, mercantile or other establishments.

OHIO

Meal and Rest Periods - Continued

Variations - In canneries or establishments engaged in preparing perishable foods, hours of labor are not restricted during the canning season.

See also Wartime Provisions.

Night Work - Prohibited for the period from 10 p. m. to 6 a. m. for all female ticket-sellers; also for females 18 to 21 employed in mills, factories, workshops; oil-wells or pumping stations; canneries or bottling or preserving establishments; mercantile or mechanical establishments; tenement houses; garment making or dressmaking or millinery establishments or working rooms; stores; offices; office buildings; laboratories; restaurants; hotels; boarding houses or apartment houses; bakeries; barber shops; boot black stands or establishments; public stables; garages; laundries; places of amusements; clubs; as drivers or chauffeurs; in any coal yard or brick, lumber or building material yards; construction or repair of buildings; transportation of merchandise.

See also Wartime Provisions.

Plant Facilities -

Seating - A suitable seat for each female employee must be provided by factories, workshops, business offices, telephone or telegraph offices, restaurants, bakeries, millinery or dressmaking establishments, mercantile or other establishments. Seats to be constructed with automatic back supports wherever practicable, and use of them permitted when employees are not engaged in active duties.

OHIO

Lunch Rooms - The establishments listed under ~~"Seating" above~~ must provide for female employees a suitable lunch room, separate and apart from the workroom; or if no lunch room is provided, employees are to be allowed at least 1 hour for meal period, in which they may leave the establishment if they desire to do so.

Dressing and Rest Rooms - Any establishment in which females are employed must provide suitable and separate dressing rooms for the exclusive use of female employees. Dressing and toilet room may be situated together. Location must be conveniently accessible to employees' workrooms.

Toilets - Any establishment employing females must provide for them suitable and separate toilet rooms, and one water closet for every 25 females or less. If an establishment is located where waterworks and sewerage are not provided, other toilet accommodations must be supplied in the same ratio as water closets, conveniently located with reference to the workbuildings.

Other Regulations

Weight Lifting and Other Conditions of Work - Females are not to be employed in any occupation that requires frequent or repeated lifting of over ~~25~~ 35 pounds, (But see Hasting Provisions)

Prohibited Occupations - ~~(Females)~~ Employment ~~as~~ baggage handling; barrooms and saloons or public drinking places which cater to male customers only and in which substitutes for intoxicating liquors are sold; ~~as~~ bellhop; ~~in~~ blast furnaces (except in offices); bowling alleys; crossing watchman; in delivery service -- wagon or automobile; express driver; freight handling; jitney driver; meter reading -- gas or electric; mines (except in offices); molder; operating freight or baggage elevator;

Prohibited Occupations - Continued

in pool rooms; quarries (except in offices); as section hand; in shoe-shining parlors; in smelters (except in offices); as in a taxi driver; work that requires frequent or repeated lifting of over 25 pounds; in operation or use of wheels or belts of emery or other specified materials; No female under 21 may be employed in the personal delivery of messages; nor at any work that compels constant standing while on duty.

See also Wartime Provisions.

Industrial Homework - Law regulates the making of wearing apparel or goods for wear and manufacture of cigars, cigarettes, or tobacco goods in any form in any dwelling or building or room or apartment thereof, in or connected with a tenement, dwelling, or other building if articles produced are to be exposed for sale or sold by a manufacturer, wholesaler, jobber, or by a retailer; except the making of garments or other goods for another by personal order, which will be received for wear or use direct from the maker's hands.

Each workroom is deemed a shop or factory, except as to the immediate members of the family living therein, and is subject to the oversight by the chief sanitary inspector, who may require necessary changes or cleaning as required to insure freedom from health hazards. Workroom must be wholly separated from living quarters, have direct outside entrance, be sufficiently lighted, heated, and ventilated.

Separate toilets required for each sex; ratio established by law, based on number of employees.

Employers must keep record of persons to whom work is given or contracts made in connection with homework, also of persons from whom goods or tobacco are purchased.

Maternity Leave - No law.

Wartime Provisions - During the war emergency, females in manufacturing may be employed 10 hours a day, 50 hours (6 days) a week. Employers handling war contracts may employ females in excess of these hours and on the 7th day if required to meet production schedules vital to the war effort; but the overtime must be reported to the State industrial relations director within 48 hours. If continued overtime in a plant is found unnecessary or injurious to women's health, work must be discontinued or restricted.

Communications company may employ women more than 6 days in any period of 7 consecutive days but not more than 6 days in any week.

Financial institutions may extend from 48 to 50 the hours of female employees during the time they are actually engaged in the preparation of reports for Government agencies.

Meal period may be 1/5 hour for females employed in a public transportation company to operate street cars, trackless trolleys, or motor coaches, or in a glass manufacturing company.

Female employees in gasoline service stations may be continuously employed for the daily legal maximum hours without interruption for a meal period.

The 1-hour lunch period is not required of financial institutions during periods when reports must be prepared for Government agencies.

Night-work restrictions are declared not applicable during the present war emergency.

For specific coverages, see sections on **Hours of Work**, **Meal and Rest Periods**, and **Night Work**.

OHIO

~~Wartime Provisions - Continued~~

Because of the war emergency and for its duration, ~~Prohibited~~ Regulated Employments for women are reduced to the following establishments and occupations: Bar rooms and saloons or public drinking places which cater to male customers only; bell hop; metal molder; mines (except in offices); pool rooms; quarries (except in offices); ~~weight lifting in~~ Maximum weight has been raised to infrequent or repeated lifting ~~of over~~ 35 pounds, and employment as messengers is permitted for girls 18 but under 21.

Minimum Wage

Att'd.

Equal Pay

No law.



Mes Frères

Ohio

Antiquité

Moyen Age

Temps Modernes

Époque Contemporaine

Et Dernière Date

Juin 16, 1934

Juin 17, 1935

Mars 30, 1937

Août 4, 1941

Sixth Egyptian

OKLAHOMA

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum, 54 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishment, laundry, bakery, hotel, restaurant, office building, warehouse, telegraph or telephone establishment or office, printing establishment, book bindery, theater, show house, place of amusement, or any other establishment.

Exemptions - Registered pharmacists, nurses, agricultural or domestic service; establishments employing fewer than 5 females in places of less than 5,000 population.

Variations - Telephone operators in time of disaster or epidemic may be employed longer hours if consent of employee is secured and double time paid. Hotel and restaurant employees in emergencies may work 1 hour overtime a day if consent of employee is secured and double time paid.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats must be provided for all female employees, and use of seats permitted when employees are not engaged in active performance of duties in manufacturing, mechanical or mercantile establishment, workshop, laundry, printing office, dressmaking or millinery establishment, hotel, restaurant, theater, telegraph or telephone establishment and office, or any other establishment.

Also, mercantile establishments, stores, shops, hotels, restaurants or other places where women or girls are employed as clerks, must provide seats for them, and permit employees to use the seats for rest and preservation of their health when not on active duties.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Separate wash rooms for each sex must be provided by factories, manufacturing establishments, or workshops where men and women are employed.

Toilet Rooms.

Adequate and suitable toilet facilities must be provided by manufacturing, mechanical or mercantile establishments, workshops, laundries, printing offices, dressmaking or millinery establishments, hotels, restaurants, theaters, telegraph or telephone establishments or offices, or any other establishment employing females.

Separate toilet rooms are required in factories, manufacturing establishments or workshops where men and women are employed.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

Females shall not be employed underground in the operation of mines or quarries. They may be employed only as office workers in the operation of coal, lead, and zinc mines.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

No law.

Minimum Wage

Authority.

Industrial welfare commission issues mandatory order based on recommendation of wage conference as to minimum rates for an occupation.

Coverage.

(1) Employees - Women (inclusion of men and minors declared unconstitutional).

(2) Industries or Occupations - Any, except agriculture, horticulture, dairy or stock raising.

Orders.

Nine orders issued in 1938 are inoperative. See opinion in Associated Industries of Oklahoma v. Industrial Welfare Commission (1939) 185 Okla. 177; 90 Pac. 2d 899. No action by trial court reported, after case remanded for consideration of reasonableness of rates established by orders.

k

Equal Pay

No laws.

SUMMARY - BY STATES

OKLAHOMAA

Hours of ~~Work~~

Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Females 16 and over) Manufacturing, mechanical, or mercantile establishment, laundry, bakery, hotel, restaurant, office building, warehouse, telegraph or telephone establishment or office, printing establishment, book bindery, theater, show house, place of amusement, or any other establishment.

Exemptions - Registered pharmacists, nurses, agricultural or domestic service; establishments in ~~areas~~ States of less than 5,000 population ~~or~~ employing fewer than 5 females.

Variations - Telephone operators in time of disaster or epidemic may be employed longer hours if consent of employee is secured and double time paid. Hotel and restaurant employees in emergencies may work 1 hour overtime a day if consent of employee is secured and double time paid.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Suitable seats must be provided for all female employees, and use of seats permitted when employees are not engaged in active performance of duties.

~~Coverage~~ Manufacturing, mechanical or mercantile establishment, workshop, laundry, printing office, dressmaking or millinery establishment, hotel, restaurant, theater, telegraph or telephone

establishment and office, or any other establishment.

Also, mercantile establishments, stores, shops, hotels, restaurants or other places where women or girls are employed as clerks, must provide seats for them, and permit employees to use the seats for rest and preservation of their health when not on active duties.

Lunchrooms - No laws.

Dressing and rest rooms - Separate wash rooms for each sex must be provided by factories, manufacturing establishments, or workshops where men and women are employed.

Toilets - Adequate and suitable toilet facilities must be provided by manufacturing, mechanical or mercantile establishments, workshops, laundries, printing offices, dressmaking or millinery establishments, hotels, restaurants, theaters, telegraph or telephone establishments or offices, or any other establishment employing females.

Separate toilet rooms are required in factories, manufacturing establishments or workshops where men and women are employed.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - Females shall not be employed underground in the operation of mines or quarries. They may be employed only as office workers in the operation of coal mines and lead and zinc mines.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - None.

Dec 1941

Okla.

Oklahoma

Authority: Industrial welfare commission issues mandatory orders based on recommendation of wage conferences as to minimum rates for ~~men~~ and women employees.

Coverage:

Employees - women.

Exclusions: Those employed in agriculture, horticulture, dairying or stock raising.

(over)

~~Hours~~ Hours - women

Mandatory Effective May 1, 1938

Recommended Effective May 1, 1938

(over)

Orders ~~of~~ Nine orders issued in 1938 are inoperative. See opinion in Associated Industries of Florida v. Industrial Relations Commission (1939) 185 Ore. 177; 9 Pac. (2d) 899. Upon [redacted] action by trial court upheld, after case remanded for consideration of reasonableness of rates established by orders.

OREGON

Hours of Work

(1) Daily - Maximum, 8 hours.
Weekly - Maximum, 44 hours.

Coverage - (Women and minors). Cherry stemming and pitting; laundry, cleaning and dyeing occupations; manufacturing occupations; mercantile, office, personal service, and public housekeeping occupations; telephone ~~or telephone~~ or telegraph establishments; commercial cracking and shelling of nuts.

Variations - In emergencies, the wage and hour commission may grant special permits allowing employment of women for longer hours. Time and a half must be paid for the overtime.

Rural telephone establishments that do not demand uninterrupted service of operators may be granted special license by the wage and hour commission for different hours of work.

In commercial cracking and shelling of nuts women may work longer hours in emergency if time and a half is paid.

(2) Daily - [redacted] No law.
Weekly - Maximum, 48 hours.

Coverage - (Women and minors). Hospital, sanitarium, or other place in which student nurses are trained or employed.

(3) Daily - Maximum, 10 hours.
Weekly - Maximum, [redacted] hours.

Coverage - (Women and minors). Beauty parlors and barber shops.

Variations - In emergencies the wage and hour commission may grant special permits allowing the employment of women for longer hours. Time a half must be paid for the overtime.

(4) Daily - Maximum, 10 hours.
Weekly - Maximum, 60 hours.

(a) Coverage - (Women and minors). Commercial processing, bleaching, grading, and packing nuts.

Variations - See Daily and Weekly hours of work law (3).

(b) Coverage - (Females). Manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, telegraph or telephone establishments or offices, or express or transportation companies.

Exemptions - Harvesting, packing, curing, canning, and drying of perishable fruits, vegetables, or fish.

Variations - Women employees in canneries, driers, or packing plants must be paid time and a half for hours over 10 a day.

Note: Special orders now prevail, establishing shorter hours for most of the industries covered by this statute.

(5) Employer must file notice with the wage and hour commission as to his choice of Schedule A or

(A) Daily - Maximum, 9 hours.
Weekly - Maximum, 44 hours (followed by 36-hour rest period);
or Schedule B:

(B) Daily - Maximum, 7 hours.
Weekly - Maximum, 44 hours (7-day week).

(a) Coverage - (Women and minors). Cooks, kitchen helpers, waiting on tables, performing janitor or general charwork in hospitals, sanitariums, convalescent and/or old peoples' homes.

Exemptions - Graduate nurses, dietitions, hospital laboratory work, student nurses whose work is confined to rendering service to patients or to work in classrooms.

(b) Coverage - (Women and minors). Cooks, kitchen helpers, waitresses, janitors, general charwomen, and all other occupations in hospitals and sanitariums with surgery.

Exemptions - Registered nurses, dietitians, laboratory work, and student nurses whose work is confined to rendering service to patients or to work in classrooms.

Day of Rest .

(Women and minors). A 6-day week established in the following occupations: Cherry stemming and pitting; laundry, cleaning and dyeing; manufacturing; mercantile; offices; personal service; public housekeeping; beauty parlors and barber shops.

Meal and Rest Periods.

(1) 3/4 hour rest period required after 6 consecutive hours of work.

Coverage - (Women and minors). Beauty parlor and babber shop, manufacturing, offices, personal service, telephone and telegraph, mercantile.

(2) 3/4 hour rest period required after 5 consecutive hours.

Coverage - (Women and minors). Laundry, cleaning, and dyeing.

(3) 10 minute rest period each half day must be given (in addition to 3/4 hour).

Coverage - (Women and minors). Mercantile.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats for all female employees must be provided by manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, or other establishments. Employees are to be permitted to use the seats when not engaged in the active duties of their employment.

Employers in mercantile occupations must provide suitable seats for their female employees.

Employers of women and minors in any occupation are required to provide for them suitable benches and tables. These must be constructed so as to give maximum comfort and convenience to employees. If employees may sit while working, convenient and comfortable seats must be furnished. Suitable seats must be provided for elevator operators. Commission may grant exemption to employers of fewer than 4 women.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Employers of women and minors in any occupation must provide a suitable place in which women may change their clothing, and where 4 or more women are employed individual lockers are required. Rest rooms, suitably equipped, must be provided (in laundry, cleaning and dyeing establishments only if 3 or more women employed). Clean and sanitary wash rooms with adequate facilities must be provided, separate and apart for each sex. Commissioner may grant exemption to employers of fewer than 4 women.

Toilet Rooms.

Employers in any occupation where women and minors are employed, must provide suitable toilet rooms, separate for each sex, in accessible locations. Ratio of facilities required: 1 toilet for every 12 women or minors employed at one time, or the majority fraction of that number. On employer's application and proper showing, the commission may release from this requirement establishments with fewer than 4 women employees.

In hop yards, orchards, berry or vegetable fields, or in any packing house where fruits, vegetables, meat, fish, or poultry are packed, cured or dried, if women are employed, at least 1 toilet seat for each 20 employees must be provided. Accommodations must be separate and apart for each sex, and, except for packing houses, they must be in separate buildings.

Other Regulations

Weight Lifting and Other Conditions of Work.

No female shall be required to lift more than 25 pounds dead weight in any occupation, trade, or industry.

No female shall be required or permitted to lift or carry any article or receptacle weighing more than 15 pounds over a distance of more than 10 feet, in any occupation, trade, or industry.

Note: It is reported that, in practice, relief from these provisions may be granted to war plants if hardships result from their application.

Prohibited Occupations - No law.

Industrial Home Work.

Women, and minors under 18 years of age, are not to be employed in the manufacture of goods in private homes, in unsanitary basements and buildings, or places unsafe because of fire hazard. This prohibition to all processes of preparation, manufacture, and production of commodities, including photography, creamery, bakery, candy, canning of meat, poultry and fish, preparing meat and poultry for market, prune drying and packing, weaving and knitting, and all other processes in the production of commodities not covered by special order.

Women, and minors under 18 years of age, are not to be employed in the commercial cracking and shelling of nuts in a private home or in the basement of a private home, unless the owner or occupant of the home has obtained an official sanitary permit authorizing the home work. Employer must keep accurate record of daily and weekly hours worked, and of wages paid to employees.

Maternity Leave - No law.

Wartime Provisions

See Weight Lifting and Other Conditions of Work(note).

~~Minimum Wage~~

OREGON

Minimum Wage

Authority.

Wage and hour commission issues mandatory order based on recommendation of wage conference as to minimum rates for occupation.

Coverage.

(1) Employer - women; minors.

(2) Industries or Occupations - Any.

Orders.

Beauty Operators and manicurists	~~Effective~~	July 22, 1941
	Supplementary order	Aug. 1, 1941
Hospitals, Sanitariums, etc.		
Service occupations	~~Effective~~	July 22, 1941
Supplementary order		Aug. 1, 1941
Amended Order	Later	Nov. 21, 1941
Manufacturing	~~Effective~~	July 22, 1941
Supplementary Order	Later	Aug. 1, 1941
Offices	~~Effective~~	July 22, 1941
Supplementary Order	Later	Aug. 1, 1941
Personal Service	~~Effective~~	July 22, 1941
Supplementary Order	Later	Aug. 1, 1941
Telephone and Telegraph	~~Effective~~	July 22, 1941
Cherry steaming and pitting	~~Effective~~	Aug. 1, 1942
Fruit and vegetable packing		Aug. 1, 1942
Fur processing and dressing (revised)		Aug. 1, 1942
Laundry, cleaning and dyeing		June 15, 1941
Mercantile		July 15, 1941
Public housekeeping		June 15, 1941

SUMMARY - BY STATES

(1) Daily - 8 hours.
Weekly - 44 hours.

Coverage - (Women and minors). Stemming and pitting of cherries; laundry, cleaning and dyeing occupations; manufacturing occupations; preparing poultry for canning or for markets; mercantile, office, personal service, and public housekeeping occupations; telephone or telegraph establishments; commercial cracking and shelling of nuts.

Details of coverage in chart.

Variations - In emergencies, the wage and hour commission may grant special permits allowing employment of women for longer hours. Time and a half must be paid for the overtime.

Rural telephone establishments that do not demand uninterrupted service of operators may be granted special license by the wage and hour commission for different hours of work.

(2) Daily - 8.
Weekly - 48 hours.

Coverage (Women and minors), Hospital, sanitarium, or other place in which student nurses are trained or employed.

(3) Daily - 10 hours.
Weekly - 44 hours.

Coverage - (Women and minors), Beauty parlor and barber shops.

Details of coverage in chart.

Variations - In emergencies the Wage and Hour Commission may grant special permits allowing the employment of women for longer hours. Time and a half must be paid for the overtime.

In commercial cracking and shelling of nuts women may work 10 hours, hours in emergency time and a half is paid.

DEPARTMENT OF LABOR

processing, bleaching,

ical, or mercantile estab-

telegraph or telephone

ansportation companies.

ing, and drying of perish-

ers, or packing plants

10 a day.

Note: Special orders now prevail, establishing shorter hours for most of the covered industries.

Daily - 9 hours.

Weekly - 44 hours (followed by 36-hour rest period),

or

Daily - 7 hours.

Weekly - 44 hours (7-day week).

Employer must file notice with the Wage and Hour Commission as to his choice of schedule A or B.

Coverage - Cooks, kitchen helpers, waiting on tables, performing janitor, or general charwork in hospitals, sanitariums, convalescent and/or old peoples' homes.

Exemptions - Graduate nurses, dietitions, hospital laboratory work, student nurses whose work is confined to rendering service to patients or to work in classrooms.

(4) Daily - 10 hours. Maximum,
Weekly - 60 hours.

(a) Coverage - (Women and minors), Commercial processing, bleaching, grading, and packing nuts.

Exceptions - See Daily and Weekly hours of work laws.

(b) Coverage - (Females), manufacturing, mechanical, or mercantile establishments, laundries, hotels, restaurants, telegraph or telephone establishments or offices, or express or transportation companies.

Exemptions - Harvesting, packing, curing, canning, and drying of perishable fruits, vegetables, or fish.

Variations - Women employees in canneries, driers, or packing plants must be paid time and a half for hours over 10 a day.

Note: Special orders now prevail, establishing shorter hours for most of the covered industries, by this statute.

(5) (a) Daily - 9 hours. Maximum,
Weekly - 44 hours (followed by 36-hour rest period),
or Schedule B:

(b) Daily - 7 hours. Maximum,
Weekly - 44 hours (7-day week).
Employer must file notice with the Wage and Hour Commission as to his choice of schedule A or B.

(7) Coverage - (a) Cooks, kitchen helpers, waiting on tables, performing janitor, or general charwork in hospitals, sanitariums, convalescent and/or old peoples' homes.

Exemptions - Graduate nurses, dietitians, hospital laboratory work, student nurses whose work is confined to rendering service to patients or to work in classrooms.

(4) Cooks, kitchen helpers, waitresses, janitors, general charwomen, and all other occupations in hospitals and sanitariums with surgery.

Exemptions - Registered nurses, dietitians, laboratory work, and student nurses whose work is confined to rendering service to patients or to work in classrooms.

Day of Rest - A 6-day week is established for women and minors in the following occupations (Detailed hrs under Hours of Work): Cherry stemming and pitting; Laundry, cleaning and dyeing; manufacturing; Mercantile; Offices; Personal Service; Public Housekeeping; Beauty Parlors and Barber Shops.

Night Work - No law.

Plant Facilities

Seating - Suitable seats for all female employees must be provided by manufacturing, Mechanical, or mercantile establishments, laundries, hotels, restaurants, or other establishments.

Employers in mercantile occupations must provide suitable seats for their female employees, including elevator operators. (See Hours of Work for detailed coverage.)

Employers of women and minors in any occupation are required to provice for them suitable benches and tables. These must be constructed so as to give maximum comfort and convenience to employees. If employees may sit while working, convenient and comfortable seats must be furnished.

Exemptions - Mercantile establishments, employers of fewer than 4 women, if commission grants permit.

Lunchrooms - No law.

Dressing rooms and restrooms - No law.

Employers of women and minors in any occupation must provide a suitable place in which women may change their clothing, and where 4 or more women are employed individual lockers are required. Rest rooms, suitably equipped must be provided (in Eldry Department dressing establishments only of 3 or more women are employed). Clean and convenient washing rooms with adequate facilities must be provided separate and apart for each sex. Commissioner may grant exemptions to employers of fewer than 4 women.

Oregon

Meal and Rest Periods

I (1) 3/4 hour rest period required after 6 consecutive hours of work.

Coverage - (Women and minors). Beauty parlors and shops, manufacturing, offices, personal service, telephone and telegraph, mercantile.

(2) 3/4 hour rest period required after 5 consecutive hours.

Coverage - (Women and minors). Laundry, cleaning and dyeing

II (1) 10 minute rest period each half day must be given (in addition to 3/4 hour).

Coverage - (Women and minors). Mercantile.

Toilets - Employers in any occupation where women and minors are employed, must provide suitable, separate toilet rooms for each sex, in accessible locations. Ratio of facilities required: 1 toilet for every 12 women or minors employed at one time, or the majority fraction of that number. On employer's application and proper showing, the commission may release from this requirement establishments with fewer than 4 women employees.

In hop yards, orchards, berry or vegetable fields, or in any packing house where fruits, vegetables, meat, fish, or poultry are packed, cured or dried, if women are employed, at least 1 toilet seat for each 20 employees must be provided. Accommodations must be separate and apart for each sex, and, except for packing houses, they must be in separate buildings.

Other Regulations

[illegible] for details of construction and maintenance.

Weight Lifting and Other Conditions of Work - No female shall be required to lift more than 25 pounds dead weight in any occupation, trade, or industry.

No female shall be required or permitted to lift or carry any article or receptacle weighing more than 15 pounds over a distance of more than 10 feet, in any occupation, trade, or industry.

Note: It is reported that in practice relief from these provisions may be granted to war plants, if hardships result from their application.

1. Prohibited Occupations - By Law.

Industrial Homework - Women and minors under 18 years of age are not to be employed in the manufacture of goods in private homes, in unsanitary basements and buildings, or places unsafe or insalubrious.

Factories - All activities of preparation, manufacture, and production of commodities, including photography, creamery, bakery, candy, cleaning of coal, poultry and fish, preparing meat and poultry for market, printing and binding, welding and knitting, and all other processes in the production of commodities not covered by special order.

Women and minors under 18 years of age are not to be employed in the commercial cleaning and shelling of fish in a private home or in the basement of a private home, unless the owner or occupant of the home has obtained an official sanitary permit authorizing the homework.

Employer must keep accurate record of daily and weekly hours worked, and of wages paid to employees.

~~For details of regulations of wages refer to Minimum Wage Laws, and under F.~~

2. Maternity Leave - By Law.

Maximum Hours

Minimum Wage

Time Clerk



(3) Mercantile — Eff. July 15, 1944
Public Housekeeping — " June 13, 1944

Beauty Operators and Manicurists
~~Factors as Order Issued~~
Eff. July 22, 1941
Supplementary Order Aug 6, 1941

Hospital, Sanitariums, etc.
(Service occupations (mandatory) Eff. July 22, 1941
Supplementary order " Aug. 6, 1941
Amended Order Dated Nov. 26, 1941

Manufacturing (mandatory) Eff. July 22, 1941
Supplementary Order Dated Aug. 6, 1941

Office ~~Occupations~~ (mandatory) Eff. July 22, 1941
Supplementary Order Dated Aug. 6, 1941

Personal Service (mandatory) Eff. July 22, 1941
Supplementary Order Dated Aug 6, 1941

Telephone and Telegraph (mandatory) Eff. July 22, 1941

~~Hospitals~~

PENNSYLVANIA

Hours of Work

Daily - Maximum, 8 hours.
Weekly - Maximum, 44 hours.

Coverage - (All females). Any establishment, that is, any place where work is done for compensation of any sort to whomever payable, including canning, processing, and packing perishable fruits and vegetables.

Exemptions - Agricultural field occupations; domestic service in private homes; orphans' homes and industrial schools; nurses in hospitals; executives over 21 and private secretaries earning at least $25 a week; outside representatives.

Variations - In nonprofit charitable or welfare institutions, hours may be 10 a day and 48 in a 6-day week.

In hotels, boarding houses, and charitable, educational, and religious institutions, the one day of rest may be subdivided into two days of 12 hours each if the department of labor and State industrial board approve.

If strict application of law imposes unnecessary hardship, ~~the department of labor and industry~~, with approval of industrial board, may prescribe variations. Regulations of the industrial board permit the following variations for employees 18 years and over.

~~In general~~:

The half-day may not exceed 5 consecutive hours.

If only 5 days a week are worked, 10 hours are allowed in any one day, but week may not exceed 44 hours.

If daily hours do not exceed 6, and a one-fourth-hour rest period is allowed, 6 days a week may be worked.

In emergencies (officially defined), daily and weekly overtime may be worked. If an emergency exists for more than 24 hours, permission for overtime must be obtained from the department.

In manufacturing, retail trade, and service industries, 10 hours a day, 48 hours in a 6-day week may be worked during inventory and seasonal periods if such periods do not exceed an aggregate of 5 weeks in a calendar year and schedule is filed in advance with the department of labor. Weekly periods may exceed 5 if application is made and the department determines that extension is necessary to avoid hardship.

Students employed on a part-time basis in educational institutions may work more than 5½ days a week but not over 8 hours a day or 44 hours a week.

Office employees with regular hours of 40 a week or less, who are on an annual salary basis and not laid off in slack periods, may be employed 10 hours a day, 54 hours a week, if employment in the quarterly period of 13 consecutive weeks does not exceed 520 hours.

If one-half hour or more is lost because of breakdown of machinery on which employee is engaged and dependent for employment, maximum hours may be extended 2 hours a day to make up time lost. Week may not exceed 44 hours. Written report must be furnished the department ~~of labor~~.

For Specific Industries:

Mail-order business - 44 hours in 6 days in any week, 10 hours in 1 day if time and a half is paid for hours over 8.

Retail trade (including beauty shops) - 44 hours in 6 days in any week, 10 hours on Saturday (or any 1 day selected in week) and on day before a legal holiday, if time and a half is paid for hours over 8.

Hotels and restaurants - (1) Service employees - Over 8 hours a day and 44 a week but not over 48 hours in 6 days in any week. Time and a half must be paid but not on the daily basis when the weekly hours do not exceed 44. This regulation does not apply to limit office employees on salary basis who work split shifts. (2) Housekeeping employees - 6 days a week.

Office building operations and management - 6 days a week.

Banking and brokerage houses (until a study is completed) - Average of 40 hours a week over 13-week period, beginning December 1, 1937 (total 520 hours), maximum hours 10 a day, 54 a week. Applies to employees on annual salary basis who are not laid off during slack periods. Tax specialists may average 40 hours and work 6 days a week over 6-month period beginning Dec. 1, 1937.

Newspaper publishing - In emergencies more than 8 hours in any 1 day, but not over 44 in 6 days in any 1 week (in towns of 50,000 or less, 48 hours). In mechanical departments, time and a half must be paid for hours over 8 a day.

Canning, processing, or packing perishable fruit or vegetables during canning season - Only on approval of labor department may cannery hours be longer than those prescribed by statute and any variance with such provisions is declared illegal.

Milk industry (plant employees) - 10-hour day; 44-hour, 6-day week (48-hour week if necessary to avoid curtailment of public service).

Radio broadcasting - Over 8 hours a day but not over 44 hours in 6 days in week.

Laundry and dry cleaning - 10-hour day, 44-hour, 6-day week.

Day of Rest.

A 5½-day week is established for all females employed in any place where work is done for compensation of any sort; subject to the exemptions and variations provided by law, shown under Daily and Weekly Hours of Work.

Meal and Rest Periods.

(1) At least one-half hour must be granted after 5 consecutive hours of work. (Interval of less than one-half hour not to be deemed an interruption to the work period.) Employees not to be required to remain in the work room during meal or rest period.

Coverage - (All females). Any establishment, that is, any place where work is done for compensation of any sort to whomever payable. Includes canning, processing, and packing perishable fruit and vegetable products.

Exemptions - Agricultural field occupations; domestic service in private homes; orphans' homes and industrial schools; nurses in hospitals; executives over 21 and private secretaries earning at least $25 a week.

Variations - In industries where manufacturing processes involve continuous operation, or where processes must be completed to avoid spoilage, or where an employee's duties require her to be away from the factory, office, or depot, the regularly scheduled meal or rest period may be eliminated if employees are permitted to eat and rest at such intervals and for such time as shall not endanger their health. Any variance from statute provision must be approved by department of labor.

Six consecutive hours permitted (a) if worker then dismissed for the day, provided one-fourth hour rest period has been allowed (considered time worked); (b) in retail establishments, if 1 hour is allowed for meals.

In canneries, etc., not more than 6 consecutive hours of employment allowed.

(2) A one-fourth hour rest period must be granted female elevator operators in any tour of duty exceeding 4 hours, unless a seat is provided in the elevator for the operator's use.

Night Work.

(1) (Females under 21). Employment prohibited between 9 p.m. and 6 a.m. in any establishment, that is, any place where work is done for compensation of any sort to whomever payable, including canning, processing, and packing of perishable fruits and vegetables.

Exemptions - See exemptions under Daily and Hourly Hours of Work law.

(2) (Females 21 and over). Employment prohibited for the period 10 p.m. to 6 a.m. in manufacturing establishments (including canneries).

Exemptions - Managers, superintendents, persons doing clerical or stenographic work.

Variations - In establishments operating not more than two shifts, females 21 and over may be employed up to 12 o'clock midnight, if such employment does not exceed 8 consecutive hours a day (exclusive of meal period) or 5 days in any one week.

(3) (Females 18 and under 21). Employment prohibited from 8 p.m. to 6 a.m. as messengers for telephone, telegraph, or messenger companies.

Plant Facilities

Seating.

At least 1 suitable seat must be provided for every 3 female employees and kept in room where women work. Seats to be accessible, and their use by employees must be allowed. Coverage is the same as for the Daily and Weekly Hours of Work law.

Lunch Rooms.

Any establishment where white lead, arsenic, or other poisonous substances or injurious fumes, dust, or gases, are present in manufacturing processes must provide a suitable room, free from designated poisonous substances, for the use of female employees.

Dressing and Rest Rooms.

Suitable wash and dressing rooms accessible to workers must be provided for use of female employees by every establishment (as defined under Daily and Weekly Hours of Work law) other than agricultural field occupations, domestic service in private homes; orphans' homes and industrial schools. If both sexes are employed, separate rooms must be provided for each sex.

Toilet Rooms.

All establishments (see Dressing Rooms) must provide suitable water closets for use of female employees (ratio): for existing installations, 1 for every 25 persons; for new installations, one for 1 to 15 persons, two for 16 to 30 persons, three for 31 to 50 persons, and one for each additional 25 persons, in an accessible location. If both sexes are employed, separate water closets must be provided for each sex.

In mercantile establishments employing more than 15 women, toilet accompdations for employees must be separate from those provided for the public.

Other Regulations

Weight Lifting and Other Conditions of Work.

Women are not to be employed: (1) In plants manufacturing explosive and chemicals unless conditions prescribed by the State labor department are met. Variation - Laboratory work in these plants is permitted.
(2) In setting up blue beds in the corroding stacks of the Old Dutch Process if non-corroded buckles or lead plates are used.
(3) In paint-grinding, lead corroding and lead oxidizing, and in the dry color industry, handling any dry substance or dry compounds containing lead in any form in excess of 2 percent. Variation - During the war emergency, the State labor department after inspection may permit employment in these occupations of females over 21 years of age.
(4) In manufacture of nitro and amido compounds. Variation - The secretary of labor ~~and industry~~ may grant permit for the employment of women over 18 years of age, if a scientific investigation by the department shows conclusively 'that exposure to the compounds in question does not exist.'
(5) In foundries, handling cores that have temperature above 100° F.

Prohibited Occupations.

No woman or girl to be employed or permitted to be:

(1) In any mine for the purpose of employment therein.
(2) In or about the outside structures of workings of a colliery for the purpose of employment. Exemption - Employment in an office or in performance of clerical work at a colliery.
(3) In handling nitrators during the process of manufacture of nitroglycering in explosive plants.
(4) In taking down blue beds after the process of lead corroding.
(5) In processing and exposure to the sorting of animal hair or bristles. Such work is considered hazardous to home workers' health and safety.
(6) In reading or testing meters (water, gas, or electric). Variation - During war emergency, women over 25 years of age may be employed in these occupations if the application is approved by the labor department.
(7) In messenger service for railroads, calling train crews. Variation - During war emergency, labor secretary may permit such employment if calls can be made by mechanical or electrical means so that women need not enter men's dormitories to call them to duty.
(8) In operating cranes except where labor secretary approves the employer's application. Variation - During war emergency, labor department may grant permission for the employment of women over 21 years of age on certain types of cranes, if department regulations are met.

(9) In certain welding and cutting operations. Variation - During war emergency, the labor department may grant permission for the employment of women over 18 years of age in acetylene cutting or electric arc welding. Department regulations as to conditions must be met.
(10) In maintaining fires in hand-fired boiler furnaces. Variation - During war emergency, labor secretary may grant permission for employment of women over 21 years of age if the plant files an affidavit showing that proper safeguards have been provided for the protection of women employees.
(11) In work on railroad tracks or at trucking for railroads. Variations - Provision for the war emergency same as in preceding entry, except that the age minimum here is 18 years instead of 21 years. (10)

Industrial Home Work.

Industrial home work must be conducted so as to insure the safety and health of all persons so employed.

The law regulates manufacture in a home of articles or materials for an employer, or his contractor, for other than the personal use of employer or a member of his family.

Work is prohibited on articles of food or drink; articles for use in serving food or drink; toys and dolls; tobacco; drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and similar articles; the tearing or sewing of rags (not to include new remnants, clippings, or selveges); articles which in processing require exposure to hazardous substances to the health or safety of persons so exposed; assembling or placing of partitions in candy boxes or food boxes. See also Prohibited Occupations (5).

Employer and contractor required to have permits before furnishing materials to home workers.

Employment permitted only of persons over 16 years of age, holding a home worker's certificate, resident in the home where the work is done, and free from an infectious, contagious, or communicable disease.

Before the employer, or his contractor, distributes materials to a home worker, he must determine that the home where work is to be done is in a clean and sanitary condition, and free from any infectious, contagious, or communicable disease.

Home work to be done only during hours of labor lawful for factory workers of the same age and sex as the home workers.

Employer, or his contractor, must furnish to the department of labor ~~and industry~~ at designated times, a complete list of his home workers, showing for each individual the name, address, age (if under 21), wages received, materials furnished, and articles produced.

Each employer, or his contractor, must attach a prescribed label to each unit of delivery or shipment to a home worker.

Each employer, or his contractor, must designate as his representative in the home where his work is done some person over 21 years of age, who shall be jointly responsible with the employer for compliance with the Industrial Home-Work Law, the Woman's Labor Law, the Child Labor Law, and the pertinent rules and regulations of the department of labor ~~and industry~~.

Maternity Leave - No Law.

Wartime Provisions

During the present war and for 6 months thereafter, females engaged on work furthering the war effort may be employed for 10 hours a day, 48 hours 6 days a week, under permit to employer from the secretary of labor ~~and industry~~ after approval of the industrial board.

Overtime provisions for hotels and restaurants extended to the theatrical industry for duration of the war emergency.

If strict application of any provision of the Meal and Rest Period Law, or of the Night Work Law, for female employees, impedes or interferes with the war effort, the department of labor ~~and industry~~, with approval of the industrial board, may suspend the provision.

Minimum Wage

Authority.

Department of labor ~~and industry~~ issues order based on recommendations of wage board as to minimum rates for occupation.

Coverage.

(1) Employees - Women; minors.

(2) Industries or Occupations - Any, except domestic service; farm labor; service in a religious community or charitable institution; newsboys, and persons subject to provisions of Federal Railway Labor Act.

Orders.

Laundry (Mandatory) - Effective February 1, 1941.
Restaurant (Directory) " August 1, 1943.

Equal Pay

Women.

~~SUMMARY OF STATE LABOR LAWS - CONTINUED~~

Women's ~~Bureau~~
U. S. Department of Labor
Washington

PENNSYLVANIA

Hours of Work:

Daily - 8 hours.

Weekly - 44 hours.

Coverage - (All females) Any establishment, that is, any place where work is done for compensation of any sort to whomever payable, including canning, processing, and packing perishable fruits and vegetables.

Exemptions - Agricultural field occupations; domestic service in private homes; orphans' homes and industrial schools; nurses in hospitals, executives over 21 and private secretaries earning at least $25 a week; outside representatives.

Variations - In nonprofit charitable or welfare institutions, hours may be 10 a day and 48 in a 6-day week.

In hotels, boarding houses, and charitable, educational, and religious institutions, the one day of rest may be subdivided into two days of 12 hours each if the department of labor and State industrial board approve.

If strict application of law imposes unnecessary hardship, department of labor and industry, with approval of industrial board, may prescribe variations. Regulations of the Industrial Board permit the following variations for employees 18 years and over:

GENERAL:

The half-day may not exceed 5 consecutive hours.

If only 5 days a week are worked, 10 hours are allowed in any one day, but week may not exceed 44 hours.

If daily hours do not exceed 8, and a one-fourth hour rest period is allowed, 6 days a week may be worked.

In emergencies (officially defined), daily and weekly overtime may be worked. If an emergency exists for more than 24 hours, permission for overtime must be obtained from the department.

In manufacturing and retail trade, 10 hours a day, 48 hours in a 6-day week may be worked during inventory and seasonal periods if such periods do not exceed an aggregate of 5 weeks in a calendar year and schedule is filed in advance with the department of labor. Weekly periods may exceed 5 if application is made and the department determines that extension is necessary to avoid hardship.

Students employed on a part-time basis in educational institutions may work more than 5½ days a week but not over 8 hours a day or 44 hours a week.

Office employees with regular hours of 40 a week or less, who are on an annual salary basis and not laid off in slack periods, may be employed 10 hours a day, 54 hours a week if employment in the quarterly period of 13 consecutive weeks does not exceed 520 hours.

If one-half hour or more is lost because of breakdown of machinery on which employee is engaged and dependent for employment, maximum hours may be extended 2 hours a day to make up time lost. Week may not exceed 44 hours. Written report must be furnished the department of labor.

SPECIFIC INDUSTRIES

Mail-order business - 44 hours in 6 days in any week, 10 hours in 1 day if time and a half is paid for hours over 8.

Retail trade (including beauty shops)-44 hours in 6 days in any week, 10 hours on Saturday (or any 1 day selected in week) and on day before a legal holiday, if time and a half is paid for hours over 8.

III Hotels and restaurants -

(1) Service employees - Over 8 hours a day and 44 a week but not over 48 hours in 6 days in any week. Time and a half must be paid but not on the daily basis when the weekly hours do not exceed 44. ~~Exception~~ Front office employees on salary basis who work split shifts.

(2) Housekeeping employees - 6 days a week.

~~Housekeeping employees~~

Office building operations and management - 6 days a week.

Banking and brokerage houses (until a study is completed) - Average of 40 hours a week over 13-week period, beginning December 1, 1937 (total 520 hours), maximum hours 10 a day, 54 a week. Applies to employees on annual salary basis who are not laid off during slack periods. Tax specialists may average 40 hours and work 6 days a week over 6-month period beginning Dec. 1, 1937.

Newspaper publishing - In emergency more than 8 hours in any 1 day, but not over 44 in 6 days in any 1 week (in towns of 50,000 or less, 48 hours). In mechanical departments, time and a half must be paid for hours over 8 a day.

Canning, processing, or packing perishable fruit or vegetables during canning season - Only on approval of labor department may cannery hours be longer than those prescribed by statute and any variance with such provisions is declared illegal.

Milk industry (plant employees) - 10-hour day; 44-hour, 6-day week (48-hour week if necessary to avoid curtailment of public service).

Radio broadcasting - Over 8 hours a day but not over 44 hours in 6 days in week.

Laundry and dry cleaning - 10-hour day, 44-hour, 6-day week.

Day of Rest: A 5½-day week is established for all females employed in any place where work is done for compensation of any sort; subject to the exemptions and variations provided by law, shown under Hours of Work.

Meal and Rest Periods:

(1) At least one-half hour must be granted after 5 consecutive hours of work. Interval of less than one-half hour not to be deemed an interruption to the work period. Employees not to be required to remain in the work room during meal or rest period.

Coverage - (All females). Any establishment, that is, any place where work is done for compensation of any sort to whomever payable. Includes canning, processing and packing perishable fruit and vegetable products.

Exemptions - Agricultural field occupations; domestic service in private homes; orphans' homes and industrial schools; nurses in hospitals; executives over 21 and private secretaries earning at least $25 a week.

Variations - In industries where manufacturing processes involve continuous operation, or where processes must be completed to avoid spoilage, or where an employee's duties require her to be away from the factory, office, or depot, the regularly scheduled meal or rest period may be eliminated if employees are permitted to eat and rest at such intervals and for such time as shall not endanger their health. Any variance from statute provision must be approved by department of labor.

Six consecutive hours permitted (a) if worker then dismissed for the day, provided one-fourth hour rest period has been allowed (considered time worked); (b) in retail establishments, if 1 hour is allowed for meals.

In canneries, etc., not more than 6 consecutive hours of employment allowed.

(2) A one-fourth hour rest period must be granted female elevator operators in any tour of duty exceeding 3 hours, unless a seat is provided in the elevator for the operator's use.

Night Work:

(1) Prohibited 9 p.m. to 6 a.m. for females under 21 employed in any establishment, that is, any place where work is done for compensation of any sort to whomever payable, including canning, processing, and packing of perishable fruits and vegetables.

Exemptions - See exemptions under Hours of Work section.

(2) Prohibited for the period 10 p.m. to 6 a.m. for females in manufacturing establishments (including canneries).

Exemptions - Managers, superintendents, persons doing clerical or stenographic work.

Variations - In establishments operating not more than two shifts, females may be employed up to 12 o'clock midnight, if such employment does not exceed 8 consecutive hours a day (exclusive of meal period) or 5 days in any one week.

In establishments canning, processing, packing perishable fruits and vegetables, adult females may be employed up to midnight if plants operate two shifts; but females between 18 and 21 may not be employed after 9 p.m.

(3) Prohibited 8 p.m. to 6 a.m. for females 18 and under 21 employed as messengers for telephone, telegraph, or messenger companies.

Plant Facilities:

Seating: At least 1 suitable seat must be provided for every 3 female employees and kept in room where women work. Seats to be accessible, and their use by employees must be allowed.

~~Coverage - See Hours of Work coverage and exemptions.~~

Lunchrooms: A suitable room, free from designated poisonous substances, must be provided for the use of female employees ~~in establishments where such substances are handled in manufacturing processes.~~

DEPARTMENT OF LABOR

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where white lead,

or injurious fumes, dust or gases, are

table wash and dressing rooms must be

both sexes are employed, separate

), other than

service in private homes; orphans'

sets must be provided for use of female

lations, 1 for every 25 persons; for new

), in an accessible location.

water closets must be provided for each

sex. See Chart II, Section B.

Exception - Same as for Dressing Rooms and Rest Rooms.

In mercantile establishments employing more than 15 women, toilet accommodations for employees must be separate from those provided for the public.

Weight lifting and other conditions of work women are not to be employed:

(1) In plants manufacturing explosive and chemicals unless conditions prescribed by the State labor department are met. Variation - Laboratory work in these plants is permitted.

(2) In setting up blue beds in the corroding stacks of the Old Dutch Process if non-corroded buckles or lead plates are used.

(3) In paint-grinding, lead corroding and lead oxidising, and in the dry color industry, handling any dry substance or dry compounds containing lead in any form in excess of 2 percent.

Variation - During the war emergency, the State labor department after inspection may permit employment in these occupations of females over 21 years of age.

~~Covered~~ - Any establishment ~~(as defined in Hours of Work)~~ where white lead, arsenic, or other poisonous substances or injurious fumes, dust or gases, are present.

Dressing ~~R~~rooms and rest rooms: Suitable wash and dressing rooms must be provided for use of female employees~~,~~ ~~and~~ If both sexes are employed, separate rooms must ~~be~~ provided for each sex. ~~Covered~~ - Any establishment (as defined under Hours of Work), other than agricultural field occupations, domestic service in private homes; orphans' homes and industrial schools.

Toilet rooms: Suitable water closets must ~~be~~ provided for use of female employees (ratio: for existing installations, 1 for every 25 persons; for new installations, ~~see tables in Chart II, Section D~~), in an accessible location. If both sexes are employed, separate water closets must be provided for each sex. ~~For construction and maintenance provisions, see Chart II, Section B.~~

~~Covered~~ - Same as for Dressing Rooms, and Rest Rooms.

In mercantile establishments employing more than 15 women, toilet accommodations for employees must be separate from those provided for the public.

Weight lifting and other conditions of work: Women are not to be employed:-

(1) In plants manufacturing explosive and chemicals unless conditions prescribed by the State labor department are met. Variation - Laboratory work in these plants is permitted.

(2) In setting up blue beds in the corroding stacks of the Old Dutch Process if non-corroded buckles or lead plates are used.

(3) In paint-grinding, lead corroding and lead oxidizing, and in the dry color industry, handling any dry substance or dry compounds containing lead in any form in excess of 2 percent.

~~Variation~~ - During the war emergency, the State labor department after inspection may permit employment in these occupations of females over 21 years of age.

(4) In manufacture of nitro and amido compounds.

Variation - The secretary of labor and industry may grant permit for the employment of women over 18 years of age, if a scientific investigation by the department shows conclusively "that exposure to the compounds in question does not exist."

(5) In foundries, handling cores that have temperature above 100° F.

Prohibited occupations:-

No woman or girl to be employed or permitted to be:-

(1) In any mine for the purpose of employment therein.

(2) In or about the outside structures of workings of a colliery for the purpose of employment.

Exemption - Employment in an office or in performance of clerical work at a colliery.

(3) In handling nitrators during the process of manufacture of nitroglycerine in explosive plants.

(4) In taking down blue beds after the process of lead corroding.

(5) In processing and exposure to the sorting of animal hair or bristles. Such work is considered hazardous to home workers' health and safety.

(6) In reading or testing meters (water, gas, or electric).

Variation - During war emergency, women over 25 years of age may be employed in these occupations if the application is approved by the labor department.

(7) In messenger service for railroads, calling train crews.

Variation - During war emergency, labor secretary may permit such employment if calls can be made by mechanical or electrical means so that women need not enter men's dormitories to call them to duty.

(8) In operating cranes except where labor secretary approves the employer's application.

Variation - During war emergency, labor department may grant permission for the employment of women over 21 years of age on certain types of cranes, if department regulations are met.

(9) In certain welding and cutting operations.

Variation - During war emergency, the labor department may grant permission for the employment of women over 18 years of age in acetylene cutting or electric arc welding. Department regulations as to conditions must be met.

(10) In maintaining fires in hand-fired boiler furnaces.

Variation - During war emergency, labor secretary may grant permission for employment of women over 21 years of age if the plant files an affidavit showing that proper safeguards have been provided for the protection of women employees.

(11) In work on railroad tracks or at trucking for railroads.

Variation - Provision for the war emergency same as in preceding entry, except that the age minimum here is 18 years instead of 21 years.

Industrial Homework - Industrial homework must be conducted so as to insure the safety and health of all persons so employed.

Manufacture in a home of articles or materials for an employer, or his contractor, for other than the personal use of employer or a member of his family.

Prohibited Work - In articles of food or drink; articles for use in serving food or drink; toys and dolls; tobacco; drugs and poisons; bandages and other sanitary goods; explosives, fireworks, and similar articles; the tearing or sewing of rags; articles which in processing require exposure to harmful substances; assembling or placing of partitions in candy boxes or food boxes.

(See also Prohibited Occupations, Section (5))

Permits - Employer and contractor required to have permits before furnishing materials to homeworkers.

Employment permitted only of persons over 16 years of age, holding a home worker's certificate, and resident in the home where the work is done, and free from an infectious, contagious, or communicable disease.

Before the employer, or his contractor, distributes materials to a homeworker, he must determine that the home ~~meets sanitary requirements of the State Health Department,~~ where work is to be done is in a clean and sanitary condition and is free from any infectious, contagious, or communicable disease.

Homework to be done only during hours of labor lawful for factory workers of the same age and sex as the homeworkers.

Employer, or his contractor, must furnish to the Department of Labor and Industry, at designated times, a complete list of his homeworkers, showing for each individual the name, address, age (if under 21), wages received, materials furnished, and articles produced.

Each employer, or his contractor, must attach a prescribed label to each unit of delivery or shipment to a homeworker.

Each employer, or his contractor, must designate as his representative in the home where his work is done some person over 21 years of age, who shall be jointly responsible with the employer for compliance with the Industrial Homework Law, the Woman's Labor Law, the Child Labor Law, and the pertinent rules and regulations of the Department of Labor and Industry.

Maternity Leave - No law.

Wartime Provisions -

During the present war and for 6 months thereafter, females engaged on work furthering the war effort may be employed for 10 hours a day, 48 hours 6 days a week, under permit to employer from the secretary of labor and industry after approval of the industrial board.

Overtime provisions for hotels and restaurants extended to the theatrical industry for duration of the war emergency.

If strict application of any provision of the Meal and Rest Period Law, or of the Night Work Law, for female employees, impedes or interferes with the war effort, the department of labor and industry, with approval of the industrial board, may suspend the provision.

7/11 attached

New Jersey

Authority ① Department of labor and industry issues orders based on recommendations of wage boards as to minimum rates for occupations.

Coverage ①

1) Employees - women; minors.

2) Industries or Occupations - Any occupations except domestic service, service in religious community or charitable institution, farm labor, newspaper, and persons subject to provisions of Federal Railway Labor Act.

Orders issued

Follow order of figures in red.

Department (Directory, Executive, August, 1943.

(over)

1. Laundry (mandatory) – Effective Feb 1, 1941.

SUMMARY - BY STATES

PHILIPPINE ISLANDS

Hours of Work

Daily - 8 hours.

Weekly - No law.

Coverage - (All employees). Any industry or occupation (public or private).

Exemptions - Farm laborers; laborers who prefer to be paid on a piece-work basis; domestic servants; persons in the personal service of another; members of employer's family.

Variations - Overtime work permitted in order to prevent loss to life and property, or imminent danger to public safety; or in case of urgent work to be performed on machine installations or equipment to avoid serious loss to employer or for some other just cause of a similar nature.

Exemption from the hours provision may be granted by the Secretary of Labor if the interest of the public demands it or if he determines it necessary in the organization or nature of the work or because of lack or insufficiency of competent laborers in a locality.

In all cases time and a quarter must be paid for overtime.

Day of Rest - Employees or laborers for any person, firm, or corporation may not be compelled to work on Sundays or legal holidays unless any work on these days be paid for at the rate of time and a quarter.

Exemptions - Public utilities performing some public service such as supplying gas, electricity, power, water, or providing means of transportation or communication.

Meal and Rest Periods - Not less than one hour shall be allowed laborers for the noonday meal in factories, shops, or industrial or mercantile establishments.

Night Work - No law.

Plant Facilities

Seating - Factories, shops, or industrial or mercantile establishments must provide proper seats for women and children employed by them. Use of seats must be permitted during hours when employees are free of work and during working hours if duties can be performed without detriment to employee's efficiency.

Lunchrooms - No law.

Dressing and Restrooms - In factories, shops, or other places of labor, at least one dressing room must be provided for women and children employed by them.

Ventilation - Small shops whose capital is small may be exempted by the director of the labor bureau.

Toilets - Separate and suitable water closets for male and female employees must be provided; also separate lavatories.

~~Lavatories~~ See Dressing and Restrooms.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female shall be employed underground in any mine. It shall be unlawful to employ women in factories, shops, and similar places of labor where the nature of the work requires the employee to stand constantly.

Industrial Homework - No law.

Maternity Leave - The owner or manager of a factory, shop, or place of labor of any description must grant to any pregnant woman employed by the

~~by~~ the establishment as a laborer 30 days' vacation with pay before and another 30 days after confinement. If the employer discharges the woman without just cause, he must pay to her wages for 2 months from the date of the discharge.

Wartime Provisions — In case of national emergency the Government may establish rules and regulations for the operation of plants and factories and may determine the amount of wages to be paid to laborers.

Until the date of adjournment of the next regular session of the National Assembly, the President of the Philippines is authorized to suspend in whole or in part and under such conditions as he may deem proper, operations of ~~Act 444 (effective September 30, 1939, prescribing~~ the 8-hour-day law (them) and if the public interest requires it.

SUMMARY - BY STATES

PUERTO RICO

Hours of Work

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Women over 16), Any lucrative occupation, that is, any factory, mill, centrale, machine shop, storehouse, store, or establishment or place where a factory or mechanical enterprise exists or where mercantile transactions are carried on; farm, plantation, rural property, or place where agricultural, horticultural or pasturing pursuits are followed; mining; fishing.

Exemptions: Telephone operators, telegraphers, artists, nurses, or domestics.

Variations - 9 hours a day may be worked if double time is paid for overtime and maximum weekly hours are not exceeded.

In the leaf tobacco industry, for hours exceeding 40 a week, time and a half must be paid al employees engaged in receiving, weighing, stewing, classifying or grading, fermenting, stemming, packing, or baling, warehousing, drying or any other operation related to the handling of leaf tobacco before being used in the manufacture of cigars, cigarettes, or other products.

Day of Rest

Meal and Rest Periods - At least 1 hour shall be allowed for meals in any lucrative occupation (as defined under Hours of Work) for women over 16. No woman may work for more than 4 hours continuously.

At least 1 hour must be allowed for meals for all employees in any commercial, industrial, or agricultural establishment, or any other lucrative business.

(1) – Puerto Rico's provisions re: minimum wage differs for various industries. Seafaring, time and a half for hours over 40 a week; sugar industry (agriculture phase), double time for hours over 8 a day (over 7 in some occupations); hospitals, clinics, or sanitariums, double time for hours over 7 a day.

(2) – Minimum wage differs for hospitals, nurses and sanitariums. Rates set employer who works regularly 6 or more hours a day, 5 or more days a week must be entitled to a rest for every 8 hrs. of work.

PUERTO RICO

Night Work - Prohibited from the period of 10 p.m. to 6 a.m. for women over 16 in any lucrative occupations (See Hours of Work for definitions).

Variation - In the industry of packing, canning or refrigeration of fruits or vegetables, any woman not pregnant may be employed during the night if she has not worked during the day, but not more than 8 hours or 48 hours during the week.

Plant Facilities -

Seating - Any establishment must provide appropriate and comfortable chairs for the use of female employees, who are to have free access to the seats at all times unless occupied in duties that require standing. Seats must be conveniently placed at or near employee's work.

Lunchrooms - No law.

Dressing and Restrooms - No law.

Toilet Rooms - No law.

Industrial Homework Law - Covers manufacture in a home of articles or materials supplied by an employer or his subcontractor to be returned to him not for his personal use or a member of his family.

Homework prohibited on: Articles of food or drink; articles intended for use in connection with the serving of food or drink; sanitary goods; cigar holders; cigarette cases; pipes for smoking or other articles for the use of smokers; tobacco handling or stripping; powder puffs or cosmetics; explosives, fireworks, or articles of like character; drugs and poisons; tobacco, cigars and cigarettes; the tearing or sewing of used rags; articles which in processing require exposure to harmful substances.

Home workers must be over 16 years of age and residents in the home in which the work is done.

Employers and representative contractors must have permits. Graduated fees, $10 to $25, based on number of homeworkers employed. Annual renewals, $5 to $10.

Homeworkers must obtain an official certificate to engage in homework.

Homeworkers must be over 16 years of age, and residents in the home where the work is done.

Individual homework regulated by hour laws for factory workers of the same age and sex as the homeworkers.

The home must be clean, sanitary, free from communicable disease. Power machines permitted by law to be used in industrial homework must have proper guards.

Employers must keep accurate record of their homeworkers, homework locations, articles or materials distributed, net cash wages paid individual homeworkers, and of subcontractors employed.

Employer must label or mark each article or material supplied for homework with his name and address in legible Spanish.

Department of labor of Puerto Rico may investigate any phase of industry employing homeworkers to determine effects of working conditions and prevailing wages on health and welfare of workers, also on existing labor standards for the industry as to factory employees in the same industry. After investigation, Department may require correction of deficiencies or discontinuance of specified industrial homework.

Maternity Leave

Employment of a woman for a period of 4 weeks before, or 4 weeks after, childbirth is prohibited.

PUERTO RICO

The law applies in

Coverage: Any office, commercial or industrial establishment, or public service enterprise, Includes work paid for through salary, wages,, day wages, or anyother kind of compensation.

Employer must pay one-half the usual compensation during the 8 weeks of rest.

On presentation of medical certificate, the working mother may be allowed 4 additional weeks. Employer not required to pay for the additional period, but must hold the position open for the worker.

During the period of pregnancy, the employer cannot discharge the worker without just cause. "Just cause" does not include decreased work production due to the pregnancy.

Wartime Provisions: ~~None.~~

No law.

Minimum Wage
Legislated

Equal Pay

No law.

Puerto Rico

(1) Authority ⊙ Statute (Operative until rates set by wage boards)

Coverage:

1) Employees: women and girls

2) Industries or Occupations:
Industrial occupations;
Commercial or public service undertakings:
Exceptions - Agriculture and agricultural industries.

(2) Authority ⊙ Minimum wage board issues mandatory order fixing minimum rates based on committee recommendation for wage as to industry.

Coverage ⊙

1) Employees - Men, women, minors

2) Industries or Occupations - Any, except domestic service.

(over)

Effective Date

Mar. 26. 1943

Carbureted Blanket

Mar. 12 1944

15 1944

Canteens and

SUMMARY - BY STATES

RHODE ISLAND

Hours of Work -

Daily - 9 hours.

Weekly - 48 hours.

Coverage - (Women; minors 16 and ~~under 18~~). Factories, manufacturing, mechanical, business, or mercantile establishment.

Exemptions - Women working by shifts during different periods of parts of the day in the employ of a public utility.

Variations - 9 3/5 hours a day may be worked in order to make a 5-day week.

Day of Rest - No law.

Meal and Rest Periods - At least 1/3 hour must be allowed for a meal after 6 consecutive hours of employment.

Variations - 6½ hours' work period permitted if employment ends not later than 1 p. m. and worker is dismissed for the day.

7½ hours' work period allowed, if worker is allowed sufficient opportunity for eating on the job, and if the employment ends not later than 2 p. m., after which the worker is dismissed for the day.

(2) In factories employing 5 or more women and children, employees must be allowed their mealtimes at the same hour.

Variations - Employees beginning work at an hour later than other employees may be alloved a different meal time. In no case may an employee tend the machines of other employees in addition to her own during the regular lunch hour.

Coverage - (Women; minors ~~under 18~~). Factories, manufacturing, mechanical, ~~business~~, or mercantile establishment.

RHODE ISLAND

Exemptions - Women working by shifts during different periods or parts of the day in the employ of a public utility; telephone exchanges where operator during the night is not required to operate at the switchboard continuously but may sleep during a considerable part of the night.

Night Work - Prohibited for persons 16 and under 21, employed as messengers for telegraph, telephone, or messenger companies.

Plant Facilities

Seating - Manufacturing, mechanical, or mercantile establishments must provide seats, conveniently located, for women and girls in their employ. Use of the seats must be permitted when duties do not require employees to stand.

Lunch Rooms - No law.

Dressing and Rest Rooms - Any establishment must provide separate dressing rooms for women and girls in their employ, if the factory inspector requires it.

Toilets - In factories, manufacturing or mercantile establishments, the owner of the building must provide toilets for each sex, separately located and properly designated if both sexes are employed. Ratio of accommodations: 25 or fewer employees of either sex, 1 water closet; more than 25 of either sex, 1 for every 40 or major fraction thereof.

All other places where women and children are employed must provide such facilities as the department inspectors find necessary to meet "demands of health and property."

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - Law covers the processing in a home, from material furnished by an employer for industrial homework, of any article or articles to be returned to him, not for the personal use of himself or a member of his family.

~~Permits~~ - Employer must obtain annual license; fees graduated $5 to $50 according to number of workers. Homeworkers must obtain certificate from director of labor. Issued as a rule only to persons at least 50 years of age or physically handicapped for outside work. However, regardless of age or handicap, persons at least 16 years of age may be certified in any industry, if homework is customary for that industry, and if its continuance will not jeopardize the welfare of the industry, of the homeworker, or of the public.

~~Wages and~~ hours of work for women and minors must conform to ~~wages and~~ hours applied by law to these groups in industrial and commercial establishments within the State.

Employers must keep an accurate list of his homeworkers, of places where the homework is done, of materials furnished, of goods processed, and rates paid each homeworker.

~~Transportation~~ costs must be paid by employer. Sufficient time must be allowed for homeworker to complete assignments without help from other persons.

~~Prohibited Work~~ - In jewelry manufacturing occupations, and wearing apparel occupations, homework is prohibited except by persons handicapped through age or disability.

Maternity Leave - No law.

Wartime Provisions - ~~None~~.

RI

Western Provisions 3a

Under the emergency powers act the Governor on approval of the State council of defense is authorized to proclaim a state of emergency when in his opinion there exists a shortage of the necessaries of life or of war. Pursuant to such proclamation he may issue orders which (1) prohibit the work, labor, or business of any ordinary calling on any day or days of the week; (2) limit the maximum hours of work of any day; (3) operate to suspend any labor necessary for the prosecution of the war or for civilian health and safety. Duties of [illegible] to enforce the act.

(However, so far as the women's bureau has information, no action has been taken under this emergency measure affecting women's labor laws.)

Rhode Island — ①

Auditing ① Director of Labor issues orders based on relevant recommendations of Minimum Wage Board.

Conference ①

1: Employees — women, minors.

Violations ① Orders, etc. Domestic service; formulation.

Orders ① issued

(Restaurant and Hotel Keepers Association (Director))

Effective date

Effective June 15, 1942

Laundries (Mandatory) Eff. Aug. 1, 1937

Women's Apparel (etc.) " Eff. Apr. 25, 1938

Laundry and Dry Cleaning " Eff. Sept. 12, 1938

Retail Trade " Eff. Mar. 18, 1940

SUMMARY - BY STATES

SOUTH CAROLINA

Hours of Work

(1) Daily - 10 hours.

Weekly - 55 hours.

Coverage - (All employees, 16 and over). Cotton and woolen mills manufacturing yarns, cloth, hosiery, and other products of merchandise.

Exemptions - Mechanics, engineers, firemen, watchmen, teamsters, yard employees, and clerical force.

Variations - Time lost by accident or other unavoidable cause, up to 60 hours in calendar year, may be made up within 3 months of the time the loss was incurred.

(2) Daily - 12 hours.

Weekly - 60 hours.

Coverage - (Females 16 and over). Mercantile establishments.

Day of Rest - (1) 6-day week established for females 16 and over in manufacturing and mercantile establishments.

Exemptions - Cafeterias, restaurants. See also Wartime Provisions.

(2) 6-day week established for all regular employees (working 20 or more hours weekly) in textile manufacturing, finishing, dyeing, printing or processing.

Exemptions - Watchmen, firemen, and other maintenance and custodial employees.

Variations - Work on Sunday permitted only for absolute necessity or emergency. Time and a half pay required.

See also Wartime Provisions.

(1)

1) Daily — Maximum 8 hours.
2) Weekly — 40 hours.

Coverage — Employees working inside or outside, cotton, rayon, silk, or woolen textile mill.

Exceptions — Office and DEPARTMENTAL supervisory, engineers, firemen, watchmen, shipping and office employees, repair shop crews, carpenters, mechanics, and electricians.

Variations — Time lost by accident or other unavoidable cause, not to any quarter of calendar year, may be made up within the quarter in which it was lost. Commissioner's labor must be notified of such overtime in advance.

SOUTHERN

5-day week established for such classes and employments listed for Daily and Weekly Hours of Work (1).

SC p.1

In a letter from the Commissioner of Labor to the Director of the Women's Bureau under date of Dec. 12, 1944, makes the following statement:
"Fifty-five hours a week in cotton and woolen mills is inconsistent with the 40-hour law, therefore, that part of the 55-hour law relating to cotton and woolen mills is repealed and the rest of the law that deals with manuf'g estabs engaged in the manufacture of yarn, cloth, hosiery, and other products of merchandise was not repealed by the 40-hour law because this kind of manuf'g is not included in the 40-hour law."

Meal and Rest Periods - No law.

Night Work - (1) Prohibited after 10 p. m. for females 16 and over employed in mercantile establishments.

(2) Limited to 55 hours a week for all employees ~~16 and over in cotton and woolen mills manufacturing yarns, cloth, hosiery, and other products of merchandise.~~

~~Exemptions - Mechanics, engineers, firemen, watchmen, teamsters, yard employees, and clerical force.~~

Plant Facilities -

Seating - Mercantile establishments or any place where goods, wares, or merchandise are offered for sale, must provide suitable seats for their female employees, in the ratio of at least 1 seat for every 3 persons. Reasonable use of seats by employees must be permitted.

Lunchrooms - No law.

Dressing ~~Rooms~~ and Rest Rooms - No law.

Toilets - Factories, mercantile, or other establishments or offices where 2 or more males and 2 or more females are employed, must provide a sufficient number of water closets, separate for each sex and plainly designated.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - Persons under 21 are forbidden to work as employees or otherwise in retail, wholesale, or manufacturing liquor businesses; employers are forbidden to hire them.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - During the present national emergency, industries engaged in producing or processing goods for National Defense and under Government contract may obtain permit from the Commissioner of Labor authorizing the employment of workers on Sunday.

SOUTH CAROLINA

-3-

Refusal to work on Sunday because of conscientious or physical objections may not jeopardize

Such employment may not be required of an employee conscientiously opposed to Sunday work and his seniority rights ~~are not to be jeopardized~~ to serve to ~~or physical grounds, nor may he be~~ discriminated against in any other way ~~because of such refusal.~~

Minimum Wage

No law.

Equal Pay

No law.

~~SUMMARY - BY STATES~~

SOUTH DAKOTA

Hours of Work

Daily - 10 hours.

Weekly - 54 hours.

Coverage - (All females). Any occupation except farm laborers, domestic servants, telegraph or telephone operators, and persons engaged in the care of livestock.

Variations - 12 hours daily may be worked during the 5 days preceding Christmas.

See also Hartine provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Mercantile or manufacturing establishments, hotels or restaurants where women or children are employed must provide suitable seats for these employees in their workrooms. Use of the seats must be permitted as may be necessary for preservation of employees' health.

Lunchrooms - No law.

Dressing rooms and rest rooms - Factories, mills, or workshops where women, girls, or children are employed must provide separate dressing rooms for each sex, if the nature of the work requires a change of clothing.

Toilets - Factories, mills, or workshops must provide separate water closets for each sex, where both males and females are employed.

SOUTH DAKOTA

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - No law.

Hartime Provisions - Under the emergency powers conferred on the Governor by the Civilian Defense Act of 1943, provisions of the hours statute ~~have been~~ suspended temporarily ~~as to certain workers by order of the Governor. To prevent waste of food and clothing supplies and to provide a proper supply of labor, during the war emergency~~ and permit the employment of females over 16 engaged in ~~the canning~~ preparing, processing, packing, and otherwise preserving, storing or distributing food products or customary by-products from vegetables and animals, ~~may be employed~~ for 11 hours a day, 66 hours a week, ~~if~~ Any such employment ~~is~~ must be entirely optional and voluntary with the worker. In an emergency ~~which may cause the loss of large quantities of~~ to save food materials from loss or destruction, 72 hours a week may be worked once in every 2-week period.

Minimum Wage

No law.

Equal Pay

No law.

New Rules

South Dakota

Check with Nat Enterprise Bureau Factories Inspection Dept

Authority ① Statutes ~~Factory Mercantile~~ Code

Coverage ①

1) Employees: women, girls.

2) Industries or Occupations

Any factory, workshop, mechanical or mercantile establishment, laundry, hotel, restaurant, or factory house.

Work 7½ Days

Women's Bureau
Department of Labor
Washington

January 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

TENNESSEE

Hours of Work

Daily - Maximum, 10½ hours.
Weekly - Maximum, 57 hours.

Coverage - (Females 16 and over). Workshops or factories, i. e., manufacturing, mills, mechanical, electrical, mercantile, art, and laundering establishments, printing, telegraph, and telephone offices, department stores, or any kind of establishment wherein labor is employed or machinery used.

Exemptions - Domestic service, agricultural pursuits, fruit and vegetable canneries.

Variations - See Wartime Provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Factories, mercantile establishments, mills, or workshops must provide a suitable seat for each female in their employ, and permit employees to use the seats at all times when such use would not actually and necessarily interfere with the proper discharge of duties. Seats to be permanent fixtures where practicable.

Lunch Rooms - No law.

Dressing and Rest Rooms - No law.

Toilet Rooms.

Manufacturing and mercantile establishments must provide separate toilet rooms for female employees in the following ratios:

10 employees or less -	1 toilet to 5 persons
11 - 74 employees -	1 toilet to 12½ persons
75 employees or more -	1 toilet to 20 persons

Rooms must be adequately ventilated and cleaned regularly.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work.

Law regulates the manufacture for sale in whole or in part of coats, vests, trousers, knee pants, overalls, cloaks, shirts, ladies' waists, purses, feathers, artificial flowers, or any other wearing apparel, or cigars, in any room or apartment in any tenement or dwelling house, used for eating or sleeping purposes. Includes any process of making, altering, repairing, or finishing for sale or for wages.

Homeworkers must be immediate members of the family living in the place where homework is done. Children under 16 may engage in homework only if they have obtained a permit from the bureau of workshop and factory inspection.

Employers must keep complete lists of industrial homework shops where they have work done, readily available to the board of health or the bureau of factory inspection.

Workshops are subject to supervision of the bureau of workshop and factory inspection. Also, the board of health must be notified within 14 days after the opening of a workshop by the person occupying it or having control. The notification must show the location, nature of work done, and the number of persons employed there.

Workshop must be well-lighted and ventilated, and contain at least 500 cubic feet of air space for each employee.

Maternity Leave - No law.

Wartime Provisions

During any national emergency the commissioner of labor with consent of the Governor may extend the hours a woman may work in industries engaged in manufacturing supplies, equipment, or material for the United States Government.

Upon the written request of a representative of the War or Navy Department of the United States, the commissioner and Governor may suspend the hour law in manufacturing plants.

Minimum Wage

No law.

~~SUMMARY - BY STATES~~

TENNESSEE

Hours of Work

Daily - 10½ hours.

Weekly - 57 hours.

Coverage - (Females 16 and over) Workshops or factories, i.e., manufacturing, mills, mechanical, electrical, mercantile, art, and laundering establishments, printing, telegraph, and telephone offices, department stores, or any kind of establishment wherein labor is employed or machinery used.

Exemptions - Domestic service, agricultural pursuits, fruit and vegetable canneries.

~~Note~~ See ~~also~~ Wartime Provisions ~~below~~

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Factories, mercantile establishments, mills, or workshops must provide a suitable seat for each female in their employ, and permit employees to use the seats at all times when such use would not actually and necessarily interfere with the proper discharge of duties. Seats to be permanent fixtures where practicable.

Lunchrooms - No law.

Dressing and Restrooms - No law.

Toilets - ~~Shops, factories,~~ mercantile establishments, ~~or other places of employment (except domestic service and agricultural pursuits)~~ must provide separate toilet rooms for ~~male and~~ female employees in the following ratios:

10 employees - 1 toilet to 5 persons

15 employees - 1 toilet to 12½ persons

75 employees - 1 toilet to 20 persons

Rooms must be adequately ventilated and cleaned regularly.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - Covers the manufacture for sale in whole or in part of coats, vests, trousers, knee pants, overalls, cloaks, shirts, ladies' waists, purses, feathers, artificial flowers, or any other wearing apparel, or cigars, in any room or apartment in any tenement or dwelling house, used for eating or sleeping purposes. Includes any process of making, altering, repairing, or finishing for sale or for wages.

Homeworkers must be immediate members of the family living in the place where homework is done. Children under 16 may engage in homework only if they have obtained a permit from the bureau of workshop and factory inspection.

Employers must keep complete lists of industrial homework shops where they have work done, readily available to the board of health or the bureau of factory inspection.

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Workshop must be well-lighted and ventilated, and contain at least 500 cubic feet of air space for each employee.

Maternity Leave - No law.

Wartime Provisions - During any national emergency the commissioner of labor with consent of the governor may extend the hours a woman may work in industries engaged in manufacturing supplies, equipment, or material for the United States Government.

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Women's Bureau
Department of Labor
Washington

January 1, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

TEXAS

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum, 54 hours.

Coverage - (Females 15 and over). Factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, cleaning and pressing establishments, hotels, restaurants, rooming houses, theaters, moving picture shows, barber shops, beauty shops, roadside drink or food-vending establishments, telegraph, telephone, or other office establishments, institutions or enterprises where females are employed.

Exemptions - Stenographers; pharmacists; mercantile establishments and telephone and telegraph companies in rural districts and in towns of less than 3,000 population; superintendents, matrons, nurses, and attendants employed by, in, or about orphans' homes that are not run for profit and not operated by the State.

Variations - In cases of extraordinary emergencies, longer hours may be worked but for such hours double time must be paid.

Laundries and cleaning and pressing establishments may work 11 hours a day, provided weekly maximum is not exceeded and double time is paid for hours over 9 a day.

Woolen, worsted, and cotton mills and factories making articles out of cotton goods may work 10 hours daily, 60 hours weekly, if double time is paid for all hours over 9 a day.

See also Wartime Provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats must be provided for female employees, and their use permitted when employees are not engaged in active duties of their employment. Notice stating this provision must be posted conspicuously in the work premises. Employers prohibited from using intimidation, instruction, threats, or other means to prevent use of seats by female employees.

The law covers factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, hotels, restaurants or rooming houses, theaters or moving picture shows, barber shops, beauty shops, telegraph or telephone companies, or other offices, express or transportation companies, State institutions or any other establishments, institutions, or enterprises where females are employed, but exempts stenographers, pharmacists, mercantile establishments or telephone or telegraph companies in rural districts and in towns of less than 3,000 population, superintendents, matrons, nurses and attendants employed by, in, and about such orphans' homes as are charitable institutions not run for profit and not operated by the State.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms - No law.

Toilet Rooms.

Factories, mills, workshops, mercantile establishments, laundries, or other establishments, must provide a sufficient number of water closets for their employees. Ratio: One to every 20 females; one to every 25 males. If both males and females are employed, separate water closets for each sex must be provided.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work.

Law covers the manufacture in a home of materials or articles delivered to another person by an employer and thereafter to be returned to him, not for his personal use or a member of his family. Employer must obtain annual permit; fee $50. Home worker must obtain an annual certificate; fee not more than 50 cents. Certificate covers only work performed by the applicant himself in his own home. Issued to any person 15 years of age or over, who is free from communicable disease, and whose home is clean, sanitary, and free from communicable disease. Neither employer nor home worker will be licensed if the home work involves the processing of articles found to be harmful to the workers or to the general public, or if authorization of home work in the industry jeopardizes existing health standards legally established for factory workers in that industry.

Employers must supply records of home workers, places where work is done, articles manufactured, agents or contractors through whom materials are distributed, and persons from whom materials are received for manufacture. Employers must label each article, package, or container of home-work goods, so as to show conspicuously the employer's name and address.

Maternity Leave - No law.

Wartime Provisions

In time of war and/or when the President proclaims a National emergency to exist, industries coming within the jurisdiction of 3 Federal Acts (Fair Labor Standards Act, Walsh-Healey Act, and Bacon-Davis Act), and, in time of war, any industry designated by the commissioner of labor statistics (AGO No. O - 5396, June 24, 1943), may employ females up to 10 hours a day, provided these hours (1) are not injurious to the women's health or morals, (2) do not add to the hazards of their occupation, and (3) are in the public interest. Any such overtime must be authorized by an order of the labor commissioner, either based on commissioner's own private investigation, or pursuant to an application filed by employers or by 1/3 of the female employees of such employers.

However, in time of war or proclaimed national emergency, office employees of employers coming under the three Federal Acts are expressly exempted from the hour limitations of the State Act.

Minimum Wage

No law.

SUMMARY - BY STATES

TEXAS

Hours of Work -

Daily - 9 hours.

Weekly - 54 hours.

Coverage - (Females 15 and over) Factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, cleaning and pressing establishments, hotels, restaurants, rooming houses, theaters, moving picture shows, barber shops, beauty shops, road side drink or food-vending establishments, telegraph, telephone, or other office, express, transporation companies, State institutions, or any other establishments, institutions or enterprises where females are employed.

Exemptions - Stenographers; pharmacists; mercantile establishments and telephone and telegraph companies in rural districts and in towns of less than 3,000 population; superintendents, matrons, nurses, and attendants employed by, in, or about ~~such~~ orphans' homes that are not run for profit and not operated by the State.

Variations - In cases of extraordinary emergencies, longer hours may be worked but for such hours double time must be paid.

Laundries and cleaning and pressing establishments may work 11 hours a day, provided weekly maximum is not exceeded and double time is paid for hours over 9 a day.

Woolen, worsted, and cotton mills and factories making articles out of cotton goods may work 10 hours daily, 60 hours weekly if double time is paid for all hours over 9 a day.

See also Wartime Provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Suitable seats must be provided for female employees, and their use permitted when employees are not engaged in active duties of their employment. Notice stating this provision must be posted conspicuously in the work premises. Employers prohibited from using intimidation, instruction, threats, or other means to prevent use of seats by female employees.

Coverage - Factories, mines, mills, workshops, mechanical or mercantile establishments, laundries, hotels, restaurants or rooming houses, theaters or moving picture shows, barber shops, beauty shops, telegraph or telephone companies, or other offices, express or transportation companies, State institutions or any other establishments, institutions, or enterprises where females are employed,

Exemptions - Stenographers, pharmacists, mercantile establishments or telephone and telegraph companies in rural districts and in towns of less than 3,000 population, superintendents, matrons, nurses and attendants employed by, in, and about such orphans' homes as are charitable institutions not run for profit and not operated by the State.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms - No law.

Toilets - Factories, mills, workshops, mercantile establishments, laundries, or other establishments, must provide a sufficient number of water closets for their employees. Ratio: One to every 20 females; one to every 25 males. If both males and females are employed, separate water closets for each sex must be provided. See Chart No. II , Sec. B. for other details.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - Law covers the manufacture in a home of materials or articles delivered to another person by an employer and thereafter to be returned to him, not for the personal use or a member of his family.

Permits - Employer must obtain annual permit; fee, $50. Homeworker must obtain an annual certificate; fee, 50 cents. Certificate covers only work performed by the applicant himself in his own home. Issued to any person 15 years of age or over, who is free from communicable disease, and whose home is clean, sanitary, and free from communicable disease. Neither employer nor homeworker will be licensed if the homework involves the processing of articles found to be harmful to the workers or to the general public, or if authorization of homework in the industry jeopardizes existing health standards legally established for factory workers in that industry.

Employers must supply records of homeworkers, places where work is done, articles manufactured, agents or contractors through whom materials are distributed, and persons from whom materials are received for manufacture. Employers must label each article, package, or container of homework goods, so as to show conspicuously the employer's name and address.

Maternity Leave - No law.

Wartime Provisions - In time of war and/or when the President proclaims a National emergency to exist, industries coming within the jurisdiction of 3 Federal Acts (Fair Labor Standards Act, Walsh-Healey Act, and Bacon-Davis Act), and, in time of war, any industry designated by the Commissioner of Labor Statistics (AAO No. 01-5396, June 24, 1943), may employ females up to

TEXAS

10 hours a day, provided these hours (1) are not injurious to the women's health or morals, (2) do not add to the hazards of their occupation, and (3) are in the public interest. Any such overtime must be authorized by an order of the labor commissioner, either based on commissioner's own private investigation, or pursuant to an application filed by employers or by 1/3 of the female employees of such employers.

Exemptions: In time of war or proclaimed national emergency, office employees of employers coming under the three Federal Acts are expressly exempted from the hour limitations of the State Act.

During this packing season hours provisions are not applied to packing or canning of perishable fruits or vegetables, or the manufacture of by-products for these commodities

UTAH

Hours of Work

Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females 18 and over). Employment in any industry, trade, or occupation, except as noted below.

Exemptions - Domestic service and executive positions; the packing, cleaning, processing or packing of fowls.

Variations - Overtime permitted for emergencies where life or property is in imminent danger or by special permit during emergency or peak periods in an employer's business. Such permits restrict hours of work to 12 a day, overtime to be worked on not more than 3 days a week, and require that time and a half be paid for hours over 8 a day.

The minimum wage order for the laundry industry requires time and a half rates for employment above 45 hours.

Day of Rest. ~~Females~~ 18 and over ~~&~~ women and minors

A 6-day week is established in the public housekeeping and laundry industries. ~~(Women and minors)~~

Meal and Rest Periods. ~~(Women and minors).~~

In any establishment or industry adult women must be allowed meal periods of at least 1/2 hour. They must not be required to work longer than 6 hours without rest and food. A rest period of at least 10 minutes must be allowed morning and afternoon to women and minor employees who must be relieved by special employees before leaving line of duty.

At least 10 minutes for rest period required for each 4 hours' work or fraction thereof for women and minor employees in retail trades, laundries, public housekeeping, ~~and~~ for women 18 years and over, and restaurant occupations.

Night Work - No law.

Plant Facilities

Seating.

Employers in stores, shops, hotels, restaurants, or other places where women or girls are employed must provide seats for them and permit employees to use the seats when not on active duties.

Lunch Rooms - No law.

Dressing and Rest Rooms.

Dressing rooms are required in all places of employment where special work clothing is necessary.

Rest rooms are required in all places employing 6 or more women. They must be properly equipped with chairs and couches for use of employees.

In factories or industrial plants where women work around machinery, a hospital or emergency room equipped with cot and first-aid supplies must be provided.

Toilet Rooms.

Employers of 3 or more women or minors in any industry or occupation must provide separate toilet rooms for women, and equipped with at least 1 toilet to every 15 employees or fraction thereof. Washing facilities, conveniently accessible, must be supplied, at least 1 bowl for every 15 employees, or fraction of that number.

Other Regulations

Weight Lifting and Other Conditions of Work.

No female employee may lift a burden over 30 pounds weight, or carry a burden in excess of 15 pounds.

Prohibited Occupations.

Females may not be employed to work in mines or smelters. (But during the war emergency females may be employed in mines, other than underground work, and in smelters.)

Industrial Home Work.

Prohibited in retail trade occupations as to any work that can be done on employer's work-premises.

Maternity Leave - No law.

Wartime Exemptions.

See Prohibited Occupations.

Dec. 15, 1944

UTAH

Minimum Wage

Authority.

Industrial commission issues mandatory order based on recommendations of wage board as to minimum rates for occupation.

Coverage.

(1) Employees - Women; minors.

(2) Industries Or occupations - Any.

Orders.

Retail Trade -(Amended)	- Effective	June 25, 1940.
Restaurant	"	Aug. 5, 1940.
Laundry	"	June 16, 1941.
Public Housekeeping	"	July 14, 1941.

Equal Pay

No law.

SUMMARY - BY STATES

UTAH

Hours of Work

Daily - 8 hours, (to be worked within 12 consecutive hours)

Weekly - 48 hours.

Coverage - Employment in any industry, trade, or occupation, except as noted below.

Exemptions - Domestic service and executive positions; packing or canning of perishable fruits or vegetables, or the manufacturing of containers for these commodities, during the packing season or the picking, cleaning, processing or packing of fowls.

Variations - Overtime permitted for emergencies where life or property is in great danger, or by special permit during emergency or peak periods in an employer's business. Standards of an 8-hour day and 45-hour week established for the Laundry industry, but overtime allowed without special permit up to a 48-hour weekly beyond that, permit necessary. Time and a half rates required for employment above 45 hours.

Standard of 8-hour day established for female employees 18 and over in Restaurants. No weekly limits.

Day of Rest - 1 day in 7-day work-week established for employees in the Public Housekeeping and Laundry industries.

Meal and Rest Periods - Meal periods of at least 1/2 hour must be allowed, women not to be required to work longer than 6 hours without rest and food.

A rest period of at least 10 minutes ~~required in all places where~~ women employees must be relieved by special employees before leaving line of duty ~~for nature's call.~~

At least 10 minutes for rest period required ~~after~~ each 4 hours' work or fraction thereof for women employees in Retail trades, Public Housekeeping, and Restaurant occupations. ~~Rest period not to be deducted from employee's working time.~~

Night work - ~~Split shifts after midnight forbidden for women in Restaurant occupations. Standard work shift is 8 consecutive hours with 1/2-hour lunch period.~~

Plant facilities

Seating - Employers in stores, shops, hotels, restaurants, or other places, where women or girls are employed must provide seats for them and permit employees to use the seats when not on active duties.

Lunchrooms - No law.

Dressing Rooms - Required in all places of employment where special work clothing is necessary.

~~Rest Rooms~~ - Required in all placed employing 6 or more women. Must be properly equipped with chairs and couches for use of employees.

Toilets - Employers of 3 or more women must provide ~~toilet accommodations~~, at least 1 toilet to every 15 employees. Separate toilet rooms for women ~~must be supplied, and~~ plainly marked. Washing facilities, conveniently accessible, must be supplied, at least 1 bowl for every 15 employees, or fraction of that number.

Other Regulations

Weight-lifting and other conditions of work - No female employee may lift a burden over 30 pounds weight, or carry a burden in excess of 15 pounds.

Prohibited Occupations - Females may not be employed to work in mines or smelters.

Industrial Homework - Prohibited in Retail Trade Occupations as to any work that can be done on employer's work-premises.

Maternity leave - None.

Wartime exemptions - See Prohibited Occupations.

(§ 7 denies the war industry exemption, so females may be employed in mines other than underground work, and in smelters.)

Minimum Wage

attached

New Law

~~Utah~~ Minimum Wage

Authority of Industrial Commission - issues orders and regulations as to reasonable minimum wage board fix minimum wage - occupation.

Coverage
1) Employers - hours, wages.
2) Certain occupations - Any commission, board

- Effective

Orders
Amended January 5, 1940
Aug. 5, 1940.
June 16, 1941
July 14, 1941.
Restaurant
Laundries
Public stenographers

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

VERMONT

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum, 50 hours.

Coverage - (Women; minors over 16). Labor in mines or quarries; manufacturing or mechanical establishments.

Exemptions - Telephone exchanges where hours of actual labor of operators do not exceed 9 hours daily, 50 hours weekly; or where operators during the night are not required to operate switchboards continuously but are able to sleep the major part of the night. Also office workers in manufacturing establishments (by AGO interpretation).

Variations - In case of extraordinary emergency or extraordinary public requirement, employers engaged in public service may be exempted. Such emergency or requirement is not to be construed to include World War II emergency.

In case of emergency or where seasonal or peak demand places an unusual and temporary burden on manufacturing or mechanical establishments, 10 hours a day, 60 hours a week may be worked, if the commissioner of industrial relations is notified and grants permission in advance for such overtime, the period of which must not exceed 10 consecutive weeks in any one year.

In any manufacturing establishment or business, the materials and products of which are perishable and require immediate labor to prevent decay or damage, any provision of the statute regulating employment of women and minors may be suspended by the commissioner of labor with approval of the Governor for a period not to exceed 2 months in 1 year.

Day of Rest 1/ - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Mercantile establishments, stores, shops, hotels, inns, restaurants, or other places where women or girls are employed as clerks or help, must provide seats for their female employees, and permit them to use the seats when not actively employed in the discharge of their duties.

1/ The commissioner of industrial relations may, with the approval of the Governor, suspend the operation of the laws of this State relating to the hours of employment of women and children while the United States is at war.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms - No law.

Toilet Rooms.

Factories, mills, workshops, or any place in which employees perform manual labor must provide at least 1 toilet seat for each 25 persons employed at any one time. Where men and women are employed at same time separate toilet rooms must be provided for each sex, and plainly designated.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work - No law.

Maternity Leave.

Employers prohibited from knowingly employing women during a period of 2 weeks before childbirth and 4 weeks afterward, at labor in mills, canneries, workshops, factories, manufacturing or mechanical establishments. This regulation must be posted in each covered establishment.

War Provisions

A 1917 statute provides that the commissioner of industrial relations may, with the approval of the Governor, suspend operation of the laws relating to hours of employment of women and children while the United States is at war.

Minimum Wage

No law.

SUMMARY - BY STATES

VERMONT

Hours of Work

Daily - 9 hours.

Weekly - 50 hours.

Coverage - (Women; minors over 16) Labor in mines or quarries; manufacturing or mechanical establishments.

Exemptions - Telephone exchanges where hours of actual labor of operators do not exceed 9 hours daily, 50 hours weekly; or where operators during the night are not required to operate switchboard continuously but are able to sleep the major part of the night.

Variations - In case of extraordinary emergency or extraordinary public requirement, employers engaged in public service may be exempted. Such emergency or requirement is not to be construed to include World War II emergency.

In case of emergency or where seasonal or peak demand places an unusual and temporary burden on manufacturing or mechanical establishments, 10 hours a day, 60 hours a week may be worked, if the commissioner of industrial relations is notified and grants permission in advance for such overtime, the period of which must not exceed 10 consecutive weeks in any one year.

In any manufacturing establishment or business, the materials and products of which are perishable and require immediate labor to prevent decay or damage, any provision of the statute regulating employment of women and minors may be suspended by the commissioner of labor with approval of the Governor for a period not to exceed 2 months in any 1 year.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Mercantile establishments, stores, shops, hotels, inns, restaurants, or other places where women or girls are employed as clerks or help, must provide seats for their female employees, and permit them to use the seats when not actively employed in the discharge of their duties.

Lunchrooms - No law.

Dressing Rooms and Rest Rooms - No law.

Toilets - [illegible].

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - No law.

Maternity Leave - Employers prohibited from knowingly employing women during a period of 2 weeks before childbirth and 4 weeks afterward, at labor in mills, canneries, workshops, factories, manufacturing or mechanical establishments. This regulation must be posted in each covered establishment.

Wartime Provisions - None.

Factories, mills, workshops, or any place in which employees perform manual labor, must provide at least 1 toilet seat for each 25 persons employed at any one time. Where men and women are employed at same time separate toilet rooms must be provided for each sex, and clearly designated.

Ch 117 statute provides that the commissioner of industries may, with the [illegible] approval, suspend operation of the laws relating to hours of employment of women and children while the U.S. is at war.

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

VIRGINIA

Hours of Work

Daily - Maximum, 9 hours.
Weekly - Maximum, 48 hours.

Coverage -(Females, 16 and over). Factories, workshops, (by interpretation includes beauty shops), laundries, restaurants, mercantile or manufacturing establishments.

Exemptions - Bookkeepers, stenographers, cashiers or office assistants, buyers, managers or assistant managers, office executives; mercantile establishments in towns of fewer than 2,000 inhabitants or in country districts.

Variations - During fruit and vegetable seasons, hour provisions do not apply to factories engaged exclusively in canning, processing, or packing fruits or vegetables.

For a period of 90 days annually women may be employed for 10 hours a day in the: (1) handling or redrying of leaf tobacco during the tobacco market seasons; (2) shelling and/or cleaning of peanuts; and (3) shucking and packing of oysters. For the 3 days preceding, and on, Valentine's Day, Christmas, Easter Sunday, and Mother's Day, women may be employed 10 hours a day in florists' shops and greenhouses.

See also Wartime Provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work.

(Girls 18 and under 21). Employment prohibited during the period from 10 p. m. to 5 a. m. ~~in employed~~ as messengers for telegraph or messenger services.

Plant Facilities

Seating.

Factories (except fruit and vegetable canning factories), shops, mills, laundries, mercantile and manufacturing establishments, must provide at least 1 suitable seat for every 3 females employed by them. Seats must be placed where the employees' work is principally performed. Employers must permit use of the seats by female employees when they are not necessarily employed in service or labor.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms.

Manufacturing establishments which employ women on work that requires standing must provide suitable rest rooms for female employees, and permit them to use the rooms at all reasonable times.

Toilet Rooms.

A sufficient number of water closets must be provided, reasonably accessible to employees, by any establishment employing 5 or more persons, and by any factory, workshop, mercantile establishment or other establishment or office employing 2 or more women or children under 18. If both sexes employed, separate water closets for each sex are required, and must be plainly designated.

Law not applicable to establishments in buildings used exclusively for offices, if separate toilets are conveniently accessible.

Application of the law to stores and office buildings in places of 5,000 inhabitants or less, to be determined by the commissioner of labor.

Sec 3

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

No female of any age shall be permitted to work in or around any mine or quarry.

No person under 21 years of age shall be permitted to sell, serve, or dispense alcoholic beverages for on-premises consumption.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

(1) During a period of war between the United States and a foreign nation, the commissioner of labor is authorized to grant temporary permits to employers engaged on war work defined, allowing the particular plant, establishment, or department or division of the establishment to employ females, 18 years of age and over, up to 10 hours a day, 56 hours a week.

Virginia

Jan. 1, 1945

Permits may be granted only when it is reasonably clear that longer hours are necessary to obtain maximum production on war work, and that the workers' health, efficiency, and general well-being are safeguarded.

(2) Until the present war emergency is over or until 1946, whichever occurs first, women are allowed to work 10 hours a day and 52 hours a week in employments essential to the prosecution of the war, as defined by the War Manpower Commission or other Federal agency authorized to designate essential activities.

Minimum Wage

No law.

VIRGINIA

Hours of Work -

Daily - 9 hours.

Weekly - 48 hours.

Coverage - (Females, 16 and over). Factories, workshops, laundries, restaurants, mercantile or manufacturing establishments.

Exemptions - Bookkeepers, stenographers, cashiers or office assistants, buyers, managers or assistant managers, office executives; mercantile establishments in towns of fewer than 2,000 inhabitants or in country districts.

Variations - During fruit and vegetable seasons, hour provisions not to apply to factories engaged exclusively in canning, processing, or packing fruits or vegetables.

For a period of 90 days annually women may be employed for 10 hours a day in the: (1) handling or redrying of leaf tobacco during the tobacco market seasons; (2) shelling and/or cleaning of peanuts; and (3) shucking and packing of oysters. For the 3 days preceding, and on, Valentine's Day, Christmas, Easter Sunday, and Mother's Day, women may be employed 10 hours a day in florists' shops and greenhouses.

See also Wartime Provisions.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - Prohibited during the period of 10 p. m. to 5 a. m. for 18 and under 21, employed as messengers for telegraph or messenger services.

Plant Facilities -

Seating - Factories (except fruit and vegetable canning factories) shops, mills, laundries, mercantile and manufacturing establishments.

must provide at least 1 suitable seat for every 3 females employed by them. Seats must be placed where the employees' work is principally performed. Employers must permit use of the seats by female employees when they are not necessarily employed in service or labor.

Lunchrooms - No law.

Dressing Rooms and Rest Rooms - Manufacturing establishments which employ women on work that requires standing must provide suitable rest rooms for female employees, and permit them to use the rooms at all reasonable times.

Toilets - A sufficient number of water closets must be provided, reasonably accessible to employees, by any establishment employing 5 or more persons, and by any factory, workshop, mercantile establishment or other establishment or office employing 2 or more women or children under 16. If both sexes employed, separate water closets for each sex are required, and must be plainly designated.

Exceptions: Law not applicable to establishments in buildings used exclusively for offices, if separate toilets are conveniently accessible.

Application of the law to stores and office buildings in places of 5,000 inhabitants or less, to be determined by the Commissioner of Labor.

See also Chart , Section D.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No female of any age shall be permitted to work in or around any mine or quarry.

No person under 21 years of age shall be permitted to sell, serve, or dispense alcoholic beverages for on-premises consumption.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - (1) During any period of war between the United States and a foreign nation, the Commissioner of Labor is authorized to grant temporary permits to employers engaged on war work (defined), allowing the particular plant, establishment, or department or division of the establishment to employ females, 18 years of age and over, up to 10 hours a day, 56 hours a week.

Permits may be granted only when it is reasonably clear that ~~extension of employees' work period is essential to producing~~ longer hours are necessary to obtain maximum output production on war work, ~~Permits granted subject to such terms and conditions as are necessary~~ and that (are) to safeguard the workers' health, efficiency, and general well-being.

Commissioner must keep a public file of permits and a statement of the investigations and findings upon which the permits are granted.

(2) Until the present war emergency is over or until 1946, whichever occurs first, women are allowed to work 10 hours a day and 52 hours a week in employments essential to the prosecution of the war, as defined by the War Manpower Commission or other Federal agency authorized to designate essential activities.

~~SUMMARY OF STATE LABOR LAWS - Continued~~

WASHINGTON

Hours of Work

(1) Daily - 8 hours. Maximum,
Weekly - No law. no of

Coverage - (Females 18 and over), Mechanical or mercantile establishments, laundries, hotels, or restaurants.

Exemptions - Harvesting, packing, curing, canning, or drying of perishable fruits or vegetables; canning fish or shell fish.

(2) Daily - 8 hours. Maximum,
Weekly - No law. no of

Coverage - (Women), Beauty culture occupations, ~~(Details in Chart I).~~

(3) Daily - 8 hours. Maximum,
Weekly - 48 hours. no of

Coverage - (Females over 18), Office workers, including all types of clerical work, ~~(Details in Chart).~~

(4) Daily - 8 hours. Maximum,
Weekly - No law. no of

Coverage - (Females and minors), Any manufacturing establishments, ~~any mercantile establishment.~~

(5) Daily - No law.
Weekly - 60 hours. Maximum, no of

Coverage - (Males and females), Household or domestic employees.

Variations - In emergencies, longer hours may be worked.

Day of Rest.

(1) Six-day week established for beauty culture occupations, office workers, manufacturing establishments, mercantile establishments. ~~(For details of coverage, see Hours of Work and references.)~~

(2) ~~Females over 18.~~ Public housekeeping occupations in hotels, rooming houses, boarding houses, restaurants, cafes, cafeterias, lunchrooms, tea rooms, apartment houses, hospitals, philanthropic institutions, and any other occupations properly classified under this industry. ~~(Detailed coverage in Chart).~~

Variation: In emergencies, women may be employed 10 days before a day of rest is given them, provided they are allowed at least 4 days' rest in any 28-day period.

Meal and Rest Periods.

(1) At least 1 hour must be allowed for luncheon to females over 18 in telephone or telegraph industries, or any public occupation (other than Public Housekeeping, Laundries, Dry cleaning and dye works, Mercantile, and Manufacturing occupations which are regulated under orders).

(2) At least 1 hour must be allowed for lunch after 5½ consecutive hours of employment to women employees in beauty culture occupations ~~(See Hours of Work)~~.

(3) At least ½-hour must be allowed for noon luncheon to females ~~and minors~~ employed in mercantile establishments.

(4) At least ½-hour meal period must be allowed after 5 consecutive hours of employment to women and minors employed in canning and packing occupations. ~~(See detailed coverage under Hours of Work.)~~

A ½-hour rest period must be given in each 4- or 5-hour shift.

(5) A ~~three-fourths~~ hour rest period must be given after 5 consecutive hours of work to female employees over 18 in office work occupations. ~~(See Chart .)~~

(6) A ½-hour rest period must be given after 5 consecutive hours of work to female employees over 18 in Public Housekeeping occupations. ~~See detailed coverage in Chart .~~

(7) A ½-hour rest period must be allowed after 6 consecutive hours of work to females over 18 employed in laundries, dry cleaning, or dye works.

Night Work

Prohibited after 12 midnight for females over 18 employed as elevator operators in Public Housekeeping occupations. ~~See Chart 1 for details of coverage.~~

Plant Facilities

Seating

(1) Stores, offices, or schools must supply 1 seat for each female employee; and the worker must be allowed to rest when her duties permit.

(2) All establishments employing females must provide suitable seats for these employees, and permit them to use the seats when not engaged in the active duties of their employment. (See exception in order for Laundries.)

(3) Manufacturing or other mercantile establishments must provide a seat for each woman at work tables or machines, where the nature of the work permits. Seats to be of adjustable type. Work tables including sorting belts to have individually adjustable foot rests.

~~a. Canning~~ and packing or freezing plant,

~~b. Packing (fresh fruit, vegetables, dried fruit).~~

~~General exemption.~~ The Industrial Welfare Committee may release by written order any covered establishment when official investigation shows that enforcement of the Seating Order would not materially serve the interests of the employees and would result in undue hardship to the employer.

Lunch Rooms - Every mercantile establishment where females are employed must provide a suitable place for eating lunches. Exemption: If fewer than 10 women are employed, the industrial welfare committee may release applicant employer from complying with this regulation.

~~Public Housekeeping Occupations~~ - Employers in Canning and Packing industries must provide a table and chairs for use by their female employees who eat their meals on the work premises.

Employers in Manufacturing and Mercantile establishments must provide adequate lunch rooms equipped with tables and chairs, also facilities for heating water, for the use of their women employees. Exemption may be allowed by the Industrial Welfare Committee in establishments where fewer than 10 women are employed.

Dressing ~~Rooms~~ and Rest Rooms - Adequate rest rooms must be provided for women employees in ~~Public Housekeeping occupations~~, Telephone and Telegraph establishments; laundries, dry cleaning, or dye works; mercantile establishments; Canning and Packing industries; and Manufacturing and other Mercantile establishments. ~~Details on Chart II, Section C.~~

~~Exemption - Supervisor of women in industry may modify this regulation~~ with respect to plants employing fewer than 10 women regularly. Exemption may be granted if it appears that enforcement ~~of this Order~~ would not materially serve employees' interests and would result in undue hardship to the employer.

Toilets. Separate toilets for women employees must be provided by employers in Public Housekeeping occupations; also in Laundries, dry cleaning, or dye works; in Telephone and telegraph employments; in Mercantile establishments, in ~~Fruit and Vegetable~~ Packing, and in Canning industries, Toilet Rooms and wash room facilities are required in Beauty Culture establishments and in Manufacturing and Mercantile establishments, for women employees. ~~For details of construction and maintenance, see Chart II.~~ Other Regulations

Weight Lifting and Other Conditions of Work.

No woman or minor shall be required or permitted to lift or carry an excessive burden, during employment in the following industries and occupations: ~~Fruit and Vegetable~~ packing, Canning, Manufacturing, and Mercantile.

Prohibited Occupations.

Employment of women or girls of any age prohibited in any mine, or in or about the surface workings of any mine, except on clerical or messenger duty about the surface workings as permitted under the school law.

Women are not to be employed as bellhops in Public Housekeeping occupations.

~~See Chart I for details of coverage.~~

Industrial Home Work - No law.

Maternity Leave.

Employers in manufacturing or other mercantile establishments are prohibited from employing a woman during a period beginning 4 months before childbirth and ending 6 weeks after childbirth. Exception may be granted if, on ~~employment of employer~~ employer's application, the committee finds from investigation that enforcement would not materially benefit the employee, and would work undue hardship to the employer.

Employers in laundries, dry-cleaning, or dye works occupations are prohibited from knowingly employing a woman for a period beginning 4 months before childbirth and ending 6 weeks after childbirth.

Wartime Provisions ~~None.~~

No law.

Minimum Wage

att'd p. 6a

Equal Pay

att'd p. 6-1

MW

Washington -

Authority - Industrial welfare committee issues mandatory orders based on recommendations & wage conformance as to minimum rates for occupation.

Coverage -

(1) Employees - women, minors.

(2) Industries or occupations - any. ~~confined to~~ ~~enumerated~~

over

Orders issued -

	Effective date
Office workers	~~Effective~~ Jan. 1, 1942
Canning	July 3, 1942
Packing (fruit & vegetable)	Sept. 7, 1942
Manufacturing	Sept. 7, 1942

Insert 5 orders on other side first

over for Mercantile

Mercantile

Effective Sept 7, 1942

Public House Cleaning (~~Service~~) Effective Oct. 4, 1921

Laundry use Dye Works " Dec. 14, 1921

Telephone and Telegraph etc. " Dec. 14, 1921

Restaurant houses " Dec. 7, 1937

Beauty culture " Dec. 1, 1940

to these & other side

or other occupations not covered by special orders

Eq Pay

Washington —

Coverage ①

All employers of both males and females ②

Any paid employment / compensated for on the basis of time or piece work or salary.

Objects ③ To prohibit discrimination in any way in the payment of wages as between sexes, or the payment to females of a less wage than that being paid to males similarly employed, or in any employment formerly performed by males. (insert sentence over)

Equal time or piece work or salary

Violation ④ Constitutes a misdemeanor Penalties provided.

Effective Date — June 9, 1943.

time & piece-work
civil action to recover

A differential in wages between employees based in good faith on a factor or factors other than sex shall not constitute discrimination.

work other side of P.

Specifically excludes a bona fide differential ~~of~~ or any other basis than ~~that of~~ sex.

Women's Bureau
Department of Labor
Washington

January 1, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

WEST VIRGINIA

Hours of Work

Daily - No law.
Weekly - No law.

Day of Rest - No law.

Meal and Rest Periods.

At least 1/2-hour lunch period must be allowed women employees in all industries.

Night Work - No law.

Plant Facilities

Seating.

Factories, mercantile establishments, mills, or workshops must provide a reasonable number suitable seats for female employees. Use of seats must be permitted when employees are not necessarily engaged in active duties, and when use will not necessarily interfere with the employees' proper discharge of duties.

Lunch Rooms.

Suitable provisions must be made by employer to enable employees to eat their meals elsewhere than in the workroom when work is done in room or apartment in any factory, mercantile establishment, mill, or workshop where white lead, arsenic, or other poisonous substances or injurious or noxious fumes, dusts, or gases are present, as the result of the business conducted. Employees may not take food into or remain in such room or apartment during meal periods.

Dressing Rooms and Rest Rooms.

Factories, mercantile establishments, mills, or workshops, must provide adequate washing facilities for employees, if necessary. If labor performed is of such character as to make a change of clothing necessary, sanitary and suitable dressing rooms must be provided for employees. Separate dressing rooms and washing facilities must be maintained for each sex.

Toilet Rooms.

A sufficient number of water closets for employees must be provided by factories, mercantile establishments, mills, workshops. If both males and females are employed, separate accommodations, plainly designated, must be provided for each sex.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Home Work.

Law covers manufacture in a home of articles or materials for an employer not for his personal use or a member of his family (does not include the several departments, agencies and institutions of the State nor any of its political subdivisions).

Prohibits manufacture of tobacco, drugs and poisons, bandages and other sanitary goods; explosives, fireworks, and goods of like character; any other articles, the manufacture of which by industrial home work is violative of State law.

Employer must obtain annual permit from the commissioner of labor. Fee is $50. Home worker must obtain an annual permit from the commissioner of labor, for which there is no charge.

Employer must label conspicuously with his name and address each article, or package of material, delivered to home workers.

Maternity Leave - No law.

Wartime Provisions.

No law.

Minimum Wage

No law.

SUMMARY - BY STATES

WEST VIRGINIA

Hours of Work - No law.

~~Daily - None.~~

~~Weekly - None.~~

Day of Rest - No law.

Meal and Rest Periods - At least 1/2-hour lunch period must be allowed women employees in all industries. ~~Workers handling harmful substances or exposed to harmful fumes or dusts should be given extra time before lunch for thorough washing.~~

If lunchroom is far removed from workroom or inadequate to accommodate all employees, additional time is recommended.

A 10-minute rest period after each 4-hour shift is recommended by the Department of Labor.

Night Work - No law.

Plant Facilities -

Seating - Factories, mercantile establishments, mills, or workshops must provide suitable seats for female employees. Use of seats must be permitted when employees are not necessarily engaged in active duties, and when use will not necessarily interfere with the employees' proper discharge of duties.

Lunch Rooms - Suitable provisions must be made by employer to enable employees to eat their meals elsewhere than in the workroom. Employees may not take food into or remain in such room or apartment during meal periods. ~~Operation~~ Room or apartment in any factory, mercantile establishment, mill, or workshop where white lead, arsenic, or other poisonous substances or injurious or noxious fumes, dusts, or gases are present, as the result of the business conducted.

Dressing Rooms and Rest Rooms - Factories, mercantile establishments, mills, or workshops, must provide adequate washing facilities for employees, if necessary. If labor performed is of such character as to make a change of clothing necessary, sanitary and suitable dressing rooms must be provided for employees. Separate dressing rooms and washing facilities must be maintained for eact sex.

Toilets - A sufficient number of water closets for employees must be provided by factories, mercantile establishments, mills, or workshops. If both males and females are employed, separate accommodations, plainly designated, must be provided for each sex.

See Chart , Sec. D. for other details.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - No law.

Industrial Homework - Law covers manufacture in a home of articles or materials for an employer not for his personal use or a member of his family (does not include the several departments, agencies and institutions of the State nor any of its political subdivisions).

Prohibits tobacco, drugs and poisons, bandages and other sanitary goods; explosives, fireworks, and goods of like character; any other articles, the manufacture of which by industrial homework is violative of State law.

Permits - Employer must obtain annual permit from the commissioner of labor. Fee, $50. Homeworker must have an annual permit from the Commissioner of labor. There is no charge.

Employer must label conspicuously with his name and address each article, or package of material, delivered to homeworkers.

Maternity Leave - No law.

Wartime Provisions - None.

Women's Bureau
U. S. Department of Labor
Washington

~~SUMMARY OF STATE LABOR LAWS - CONTINUED~~

WISCONSIN

Hours of Work -

I. Daily - 9 hours.

Weekly - 50 hours.

Coverage -

(1) (Females 18 and over) Place of employment (that is, any manufacturing, mechanical, or mercantile establishment, beauty parlor, laundry, restaurant, confectionery store, telegraph or telephone office or exchange, express or transportation establishment).

Exemption - Registered pharmacists and assistant pharmacists.

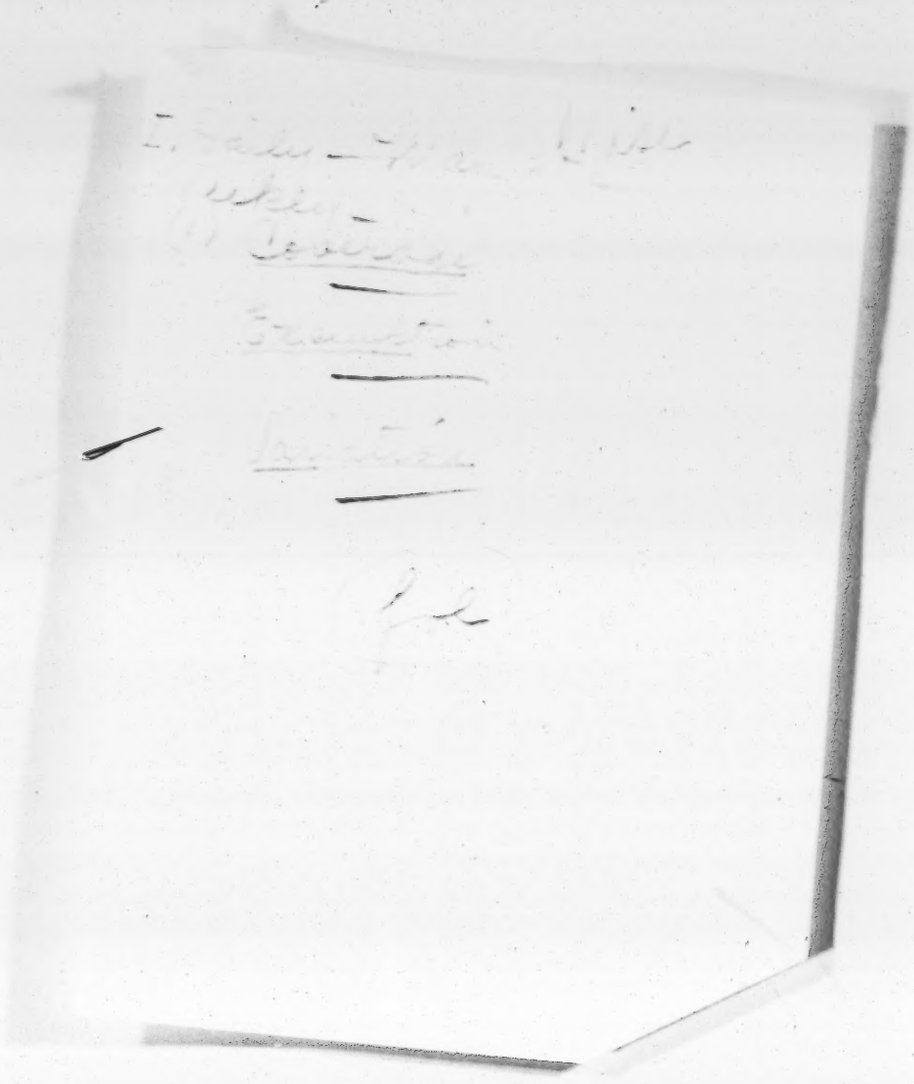
Variations - 10 hours a day, 55 hours a week, may be worked during emergency periods of not more than 4 weeks a year if time and a half is paid for the overtime. The Industrial Commission must be notified within 24 hours after the beginning of overtime employment.

The Commission has power "To investigate, ascertain, determine and fix such reasonable classification and to issue general or special orders" fixing the working time of females. Until the commission issues such orders, however, the statutory limitations prevail.

(2) (~~Women 18 and over; minors, 14-18~~) Factories engaged in canning or first processing of perishable fresh fruits and vegetables.

Variations - 54 hours a week permitted ~~for all females~~ during the season of actual canning of product.

In emergencies occasioned by breakdowns, climatic conditions, or unusual peak loads, canneries which have complied with safety and sanitation laws and industrial commission orders may employ women 17 years and over on not more than 12 days in the season for over



9 but not more than 11 hours a day and 60 hours a week.

For hours over 9 a day, 54 a week, time and a half must be paid.

(3) (Females 18 and over) Telephone exchanges where the number of telephones is 4,000 or over.

Exemption — Private exchanges where the work is done by members of the family.

II. Daily — 9 hours.

Weekly — 54 hours.

Coverage — (Females 18 and over) Telephone exchanges, where the number of telephones is 1,000 to 4,999.

Exemption — See II (3) above.

III. Daily — 9 hours.

Weekly — 56 hours.

Coverage — (Females 18 and over) Telephone exchanges where the number of telephones is 500 to 999.

Exemption — See II (3) above.

IV. Daily — 10 hours.

Weekly — 60 hours.

Coverage — (Females 18 and over) Telephone exchanges, where the number of telephones is less than 500.

Exemption — See II (3) above.

V. Daily — 10 hours.

Weekly — 55 hours.

Coverage — (Females 18 and over) Hotels.

VI. Daily — 8 hours.

Weekly — No law.

Coverage — (Females 18 and over) Conductors, motormen, or flagmen on street-car lines, in places other than first-class cities and suburbs of such cities.

For temporary variations of hours of work, see Wartime Provisions.

Day of Rest

6-day week established for all employees in factories or mercantile establishments.

Exemptions - (Specified in statute).

Variations - Reasonable exceptions to the law's provisions may be made by the Industrial Commission if it determines that the carrying out of such provisions causes practical difficulties or unnecessary hardships. The "life, health, safety and welfare of employees shall not be sacrificed or endangered."

See also the last paragraph of Hours of Work I (1); and for temporary variations, see Wartime Provisions.

Meal and Rest Periods

I. At least 1 hour during each day or night for dinner or other meal.

Coverage - See Hours of Work I(1).

Variations - See last paragraph of Daily and Weekly Hours of Work I(1).

II. At least 3/4-hour lunch period to be allowed after 6 consecutive hours of employment, where conveniently located and adequately equipped lunch rooms are on work premises.

At least ¾-hour lunch period must be allowed as near the middle of the work period as possible, if the employment continues for more than 4½ hours but not more than 6 hours.

Coverage - (All females), Manufactories and laundries.

III. At least ½-hour meal period must be allowed, where employees eat their meals on premises. The stretch of labor between meals must not exceed 5 hours.

Coverage - (All females), Restaurants.

IV. At least ½ hour must be allowed at the usual time for meals; that is, at or about 12 noon, 6 p.m. or 12 midnight. Stretch of work between meals may not exceed 6 hours.

~~A rest period of at least 9 consecutive hours must be allowed each day.~~

I Coverage - (Females) Factories engaged in seasonal canning or first

I ~~or first~~ processing of perishable fresh fruits and vegetables.

V. One hour of time for meals must be allowed, during which employees shall

I be free of the duties of employment.

II Coverage (Women) Telephone exchanges.

For temporary variations, see Wartime Provisions.

Night Work

I. Work prohibited ~~between the hours of~~ 8 p.m. to 6 a.m. ~~for~~ minors under 21.

(II) Work prohibited from 6 p.m. to 6 a.m.

Coverage - (Females (Taxi-boys) Manufacturing and laundries

Exceptions - Office workers; shampooers.

Variations - In canneries, employment may be continued until 7 p.m. on Saturdays if no Sunday work is required and the number of hours stipulated in statute

(III) Work prohibited from 5 p.m. to 3 a.m. in cities of 1st class and their suburbs, (1-) from 5 p.m. to 6 a.m. in other places

Coverage - (Females 16 and over). Conductors, motormen, or ~~flag~~ lagmen on street cars.

~~Weekly~~ 54 hours a week.

IV Coverage - (Females 16 and over) Hotels.

~~IV~~. Employment between 6 p.m. and 6 a.m. on more than one night a week may not exceed 8 hours a night, 48 hours a week.

Coverage - (Females 16 and over) Restaurants.

See last paragraph of Daily and Weekly Hours Work I (1).

~~A rest period~~ of at least 9 consecutive hours ~~must be allowed each day.~~

I Coverage - (Females) Factories engaged in seasonal canning or first

I ~~or first~~ processing of perishable fresh fruits and vegetables.

V. One hour of time for meals must be allowed, during which employees shall

III be free of the duties of employment.

I Coverage (Women) Telephone exchanges.

For temporary variations, see Wartime Provisions.

Night Work

I. Work prohibited ~~between the hours of~~ 8 p.m. to 6 a.m. ~~for~~ minors under 21).

~~21, employed as~~ messengers for telegraph or messenger companies, in cities of the first, second, and third classes.

See also Wartime Provisions.

II. Work restricted to ~~following schedule:~~

Daily - 8 hours a day,

Weekly - 48 hours a week.

~~Definition:~~ "Night work" is work done between 8 p.m. and 6 a.m. If employment is required after 8 p.m. on ~~more than~~ one night a week, it will be deemed night work under the law.

Coverage:- (Females 18 and over). ~~See coverage under Hours of Work, I(1).~~

~~III.~~ IV. ~~Work performed~~ Employment between 7 p.m. and 6 a.m. ~~restricted to following schedule:~~ may not exceed

~~Daily~~ - 8 hours a night,

~~Weekly~~ - 54 hours a week.

V Coverage - (Females 16 and over) Hotels.

~~IV.~~ Employment between 8 p.m. and 6 a.m. on more than one night a week may not exceed 8 hours a night, 48 hours a week.

Coverage - (Females 16 and over) Restaurants.

~~Same exceptions as in Daily and Weekly Hours~~ Work I(1).

V. Employment between 6:30 p.m. and 6 a.m. on more than one night a week, may not exceed 8 hours a night, 48 hours a week.

Coverage - ~~employment~~ (Females 16 and over), Mechanical or mercantile establishments, beauty parlors, confectionery stores, telegraph or telephone offices or exchanges, or express or transportation companies (other than street cars).

Exemptions - Pharmacists and assistant pharmacists; telephone exchanges having less than 2,000 telephones.

For temporary variations, see Wartime Provisions.

Plant Facilities

Seating - Manufacturing, mechanical, or mercantile establishments must provide suitable seats for female employees, and permit employees to use the seats when not engaged in active duties of employment.

Lunchrooms - No law.

Dressing ~~rooms~~ and Rest Rooms - Locker rooms, separate from toilet rooms and equipped with necessary benches, tables, and individual lockers of prescribed types, must be provided for employees.

~~Coverage~~ - Factories, mines, railroad shops, warehouses, foundries, and other similar occupations; places of employment where it is customary or, because of the nature of the work, necessary to change clothing. ~~Mercantile establishments~~ may provide dressing rooms in lieu of locker rooms.

Rest rooms, "suitably furnished for the purpose of reclining," must be provided in all places employing 5 or more women. ~~In buildings where individual offices are maintained, at least one rest room must be provided for occupants of the building.~~ Every rest room must be properly lighted, heated, and ventilated.

First-aid rooms, properly equipped to afford reasonable first-aid treatment, are required in all places employing 250 or more employees on any one shift.

First-aid cabinet, with readily-accessible equipment, fully stocked, and kept in orderly, sanitary condition, must be provided by any establishment employing between 3 and 250 employees. ~~(See Hours of Work I(1) for detailed coverage).~~

Toilets - Any place of employment ~~(see Hours of Work I(1) for detailed coverage)~~ where 5 or more persons of both sexes work must provide separate toilet rooms for each sex. Rooms must have separate entrances, properly screened and distinctly marked.

~~Ratio:~~ One water closet must be provided for every 20 persons or fraction thereof of either sex on any one shift.

~~(Lavatories - At least 1 for every 5 toilet fixtures.~~

~~Outdoor toilets~~, conforming to the industrial commission's orders and conditions, must be provided, when water and sewer systems are not available to the employer.

~~Washing facilities, as prescribed by the industrial commission, required in certain establishments. (For details of coverage and equipment~~

~~See Order No. II, subject to~~

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations

Employment of females forbidden in or about a mine or quarry.

Minors or females are not to be employed or permitted to work in any place of judicially established ill-repute, nor for any person convicted of operating or acting as agent for a disorderly house.

Employment forbidden of girls under 21 as bellhops in hotels or as caddies on golf courses.

Industrial Home Work (c)

The law regulates the manufacture, alteration, repair or finishing of articles in any tenement or dwelling, shed or other building in the rear thereof, for any factory operator or his contractor.

Employer must obtain ~~annual~~ permit from the industrial commission to engage in home work manufacture, also an annual license from the local health officer for the home where the work is to be done. License granted only after inspection and approval by health officer. Fee, ~~$1.00~~ No provision made for home worker's certificate.

Home workers must live in the premises, and be at least 18 years of age.

Minimum ~~piece~~ rates to women and minors employed on home work may not be less than the regular minimum wage rates paid women and minor employees of average ability in the employer's factory.

Employer's permit to engage in home work conditioned on his compliance with State wage and hour laws for women and minors in regularly established factories and places of employment.

Industrial commission and State board of health jointly empowered to regulate and control industrial home work, and may prohibit work on specified articles if necessary to protect the health of workers or consumers.

Employer must keep register of home workers, also of work assigned and completed, with wages paid.

Label, bearing in legible English factory name and location, to be affixed to home work articles by employer.

Maternity Leave - No law.

Wartime Provisions

No special legislation. However, the State Industrial Commission, acting under general authority, issues "special orders" to specific plants on application of individual employers. Under these special orders, temporary variations have been authorized in the laws governing hours of work, days of rest, night work, and meal periods.

Minimum Wage

Equal Pay

Wisconsin

Authority of industrial commission, with advisory wage board, advisory wage board, advisory wage board,

Domestic Service Manual (Ed) June 1937

General Order 4 " (Ed) Dec 1936

Women's Bureau
Department of Labor
Washington

January, 1945

STATE LABOR LAWS FOR WOMEN

This outline shows in summary form the current labor laws applicable to women 18 years of age and over, together with the occupational coverage.

WYOMING

Hours of Work

Daily - Maximum, 8 hours.
Weekly - Maximum, 48 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical, or mercantile establishments, laundries, hotels, public lodging houses, apartment houses, places of amusement, and restaurants.

Variations - Overtime allowed in an emergency if time and a half is paid for hours over 8 a day.

An executive order or proclamation of the President of the United States declaring an emergency is to be construed as an emergency within the meaning of this Act.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating.

Suitable seats for all female employees must be provided by manufacturing, mechanical, or mercantile establishments, laundries, hotels, or restaurants, or other establishments employing females.

Employees must be permitted to use the seats when they are not necessarily engaged in their active duties.

Lunch Rooms - No law.

Dressing Rooms and Rest Rooms - No law.

Toilet Rooms - No law.

Other Regulations

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations.

Employment of women or girls forbidden (except in offices or in performance of clerical work) in or about any coal or iron mine, or other dangerous place.

Industrial Home Work - No law.

Maternity Leave - No law.

Wartime Provisions

See Daily and Weekly hours of work.

Minimum Wage

No law.

SUMMARY - BY STATES

WYOMING

Hours of Work

Daily - 8 hours.

Weekly - 48 hours.

Coverage - (Females 16 and over). Manufacturing, mechanical or mercantile establishments, laundries, hotel, public lodging houses, apartment houses, places of amusement, and restaurants.

Variations - Overtime allowed in an emergency if time and a half is paid for hours over 8 a day.

An executive order or proclamation of the President of the United States declaring an emergency is to construed as an emergency within the meaning of this Act.

Day of Rest - No law.

Meal and Rest Periods - No law.

Night Work - No law.

Plant Facilities

Seating - Suitable seats for all female employees must be provided by manufacturing, mechanical or mercantile establishments, laundries, hotels, or restaurants, or other establishments employing females.

Employees must be permitted to use the seats when they are not necessarily engaged in their active duties.

Lunchrooms - No law.

Dressing rooms and rest rooms - No law.

Toilets - No law.

Weight Lifting and Other Conditions of Work - No law.

Prohibited Occupations - Employment of women or girls forbidden (except in offices or in performance of clerical work) in or about any coal or iron mine, or other dangerous place.

Industrial Homework - No law.

Maternity Leave - No law.

Wartime Provisions - See Hours of Work above.

SUGGESTED STANDARDS FOR UNION CONTRACT PROVISIONS AFFECTING WOMEN

MARCH 1944

Suggested Standards

for

Union Contract Provisions Affecting Women

Many requests have come to the Women's Bureau for standards covering women's employment which might be recommended for inclusion in union contracts. On February 21, 1944, the Bureau called a conference of women representatives from organized groups, both AFL and CIO, which have a significant woman membership. At this meeting both the principles and wording of proposed contract provisions were discussed from the standpoint of their adequacy in meeting women's needs. The conference agreed on the standards outlined herein.

Why standards are needed

Since the contract determines in large part the conditions under which women as well as men will work, it is very important not only that it contain provisions on subjects of importance to women's welfare but also that these provisions be so worded as to safeguard women's interests. Subjects of special importance to women are wage rates, seniority, provisions for meal and rest periods and maternity leave.

UNITED STATES DEPARTMENT OF LABOR
Frances Perkins, Secretary

WOMEN'S BUREAU
Mary Anderson, Director

GENERAL

It is mutually agreed between the company and the union that no discrimination based on sex or marital status shall be practiced or permitted.

WAGES

Wage rates established under this contract shall be set by the job, not by the sex of the worker. Wage rates and job classifications shall be based on job content.

Jobs or departments shall not be designated by sex, as "male" or "female" jobs, or "men's" or "women's" departments, or by any other wording with a similar meaning and effect. All previously existing sex classifications shall be eliminated.

The starting rate shall be the same for all inexperienced workers, irrespective of sex. The automatic progression schedule applicable during the training period likewise shall be the same for all workers.

SENIORITY

Women shall accumulate seniority in the same manner as male employees, and shall have the same rights of promotion or transfer to other departments. If it becomes necessary to eliminate or curtail the work of any department in which women are employed, they shall be entitled to carry their seniority to other departments. No new employees shall be hired as long as women currently employed are available for upgrading in the same department or for assignment to jobs in other departments.

REST PERIODS

In addition to a regularly scheduled lunch period, each employee covered by this agreement shall be given two 10-minute rest periods in each workday. During such periods the employee shall be free to leave his work place. Such rest periods shall be paid for at the employee's regular rate and shall not result in lengthening his over-all workday.

LUNCH PERIODS

Every employee shall be given a regularly designated lunch period which shall occur not more than 5 hours from the beginning of the employee's workday. Such lunch period shall be at least 30 minutes. A 30-minute lunch period shall be paid for. During his lunch period no employee shall be required to remain at his work place or to perform any duties connected with his employment.

MATERNITY LEAVE

Pregnancy shall not be grounds for dismissal of any woman employee. If the work in which such employee is customarily engaged is, in the opinion of her physician, rendered difficult or dangerous because of her condition, the company shall, upon receipt of such physician's written statement, transfer her to suitable work.

Any woman employee who is pregnant shall, upon presentation of doctor's certificate stating the probable date of her confinement, be granted maternity leave of not less than 6 weeks before delivery and 2 months after delivery. Additional leave up to a total of one year shall be granted at such employee's request, upon presentation of a doctor's certificate stating the necessity therefor. Any woman employee who is absent from work on maternity leave shall continue to accumulate seniority during the first 3½ months of her absence and thereafter shall retain her full seniority until the expiration of one year from date of leaving. At such employee's written request, all unused sick leave allowance with pay in both the current and preceding years, and all or any part of her current unused vacation allowance with pay, shall be charged to maternity leave and compensation accordingly shall be paid to her at the beginning of leave.

Any woman employee absent on maternity leave shall, upon returning to work, be returned to her former job at a rate of pay not less than currently paid on the job at which she was formerly employed; or if such work is not available or not suitable, she shall be transferred to another job of equivalent value, providing that such transfer shall not be made against her consent and shall not involve work for which she is not qualified.

The following publications of the Women's Bureau set forth the standards recommended for employed women. They are of interest to unions seeking information and counsel on programs geared to the interests of their women members.

Effective Industrial Use of Women in the Defense Program. 10¢.

Lifting Heavy Weights in Defense Industries. 5¢.

Safety Clothing for Women in Industry. 10¢.

Safety Caps for Women Machine Operators. 5¢.

Washing and Toilet Facilities for Women in Industry. 5¢.

Women's Effective War Work Requires Time for Meals and Rest. 5¢.

Night Work for Women and Shift Rotation in War Plants. 5¢.

Women's Effective War Work Requires Good Posture. 5¢.

Progress Report on Women War Workers' Housing. April 1943. 5¢.

When You Hire Women. 10¢.

Community Facilities for Women War Workers. 5¢.

Standards for Maternity Care and Employment of Mothers in Industry. Free.

Equal Pay for Women in War Industries. 10¢.

Recreation and Housing for Women War Workers. 10¢.

Wartime Reminders to Women Who Work: The Paying Guest; The Paid Hostess. 5¢.

March 1944

TRAINING



AMERICAN WOMEN AT WAR



Fifteen crack newspaperwomen, representing press services and leading metropolitan dailies, undertook a transcontinental tour of war industries last August. They spent 15 days trudging miles and miles through humming factories to see for themselves and their readers the role played by women in the miracle of production which has made the United States States the arsenal of democracy. The following pages are unedited accounts by seven of the newspaperwomen who participated in the tour arranged for them by the National Association of Manufacturers.

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THE NATIONAL ASSOCIATION OF MANUFACTURERS
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A Publication of the
NATIONAL INDUSTRIAL INFORMATION COMMITTEE

AMERICAN WOMEN AT WAR

By seven newspaper women, members of a party of 15 on a coast-to-coast tour of war industries arranged for them by the National Association of Manufacturers.

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Foreword

by

Mrs. William Brown Meloney

Editor, *This Week* Magazine

NO person of judgment and Christian character will advocate war as a means of settling disputes until all other means have failed, and all of earth's peoples except the naturally bestial yearn passionately for the day when war will be forever banished from this globe.

But though we all hate war, we can extract some comfort from the fact that even war has a credit side. The great historic fires of Chicago, San Francisco, and London destroyed many lives and much property, but they also, as slight compensation, paved the way for better cities to rise on the ashes of the old.

The same is true of this global war, the most terrible catastrophe in all recorded history. Even it has its credit side. We should be cheating ourselves if we did not admit that, because until we admit the gains we cannot take advantage of them to build a better world when the war is over. And to build a better world—to make the credit side of the war permanent—is the only adequate way we can consecrate ourselves to the memory of the men and women and little children who will have lost their lives in it, and to the still living who mourn them.

What then can we, as Americans, put down on the credit side?

The most obvious gain from the war is a great speeding up of scientific and technical discoveries. In his recent dramatic speech on this subject, Dr. Charles M. A. Stine, vice-president of E. I. du Pont de Nemours and Company, said:

> Today, even as I speak, the war is compressing into the space of months scientific and technological developments that might ordinarily have taken us a half-century to realize if necessity had not forced the pace.
>
> One does not need to venture into prophecy to sketch the bold lines of what that progress can be. They have already been traced. Already our world of 1940, in which we

took such pardonable if mistaken pride, is so far distant that it has become an antiquity, as seen through scientific eyes. The inconceivables of two years ago are today's realities. . . .

"The nation will emerge from this war with capacities for making plastics, synthetic fibers, nitrates, hydrocarbons, high octane gasoline, and literally scores of chemical and other raw materials on a scale that only two years ago was beyond our comprehension."

Under the whiplash of necessity and because—horrible to admit—the surgeon's laboratory has broadened out to embrace the whole world—medicine also has made advances which would have come much more slowly under peacetime conditions. Three examples are the development of blood plasma, the wide use of the sulfa drugs to prevent wound infection, and greater public education in nutrition.

The second great gain for our country is the better understanding between industry, labor, and government. Big business is out of the dog house and is showing its teeth—against the common enemy. It is also showing a growing realization of its own social responsibilities and past mistakes, and a willingness to admit them. There are indications that labor, in turn, seeing the tragic example of France, is realizing that national welfare is more important than success in the struggle of class against class.

The third great gain, as proven by this interesting and significant series of articles, is an outgrowth of the part women are playing to win this war. As Nell Giles points out in her article significantly titled, "They Are Dependable," 3½ million women are now punching clocks in American shipyards, munition plants, airplane factories, and tank arsenals. When war production will have reached its peak, 2½ million more women will be on the assembly lines of American industry.

This is a great, revolutionary development. It has come with such swiftness that few people realize its implications. Though millions of these women will return to their first jobs as homemakers when the war is over, the aftermath of their participation will be important.

Most significant, perhaps, will be the effect on the women themselves. This is the first war in which they have been able—or allowed—to play so vital a part.

Although a certain number of women went into factories in the First World War, women's historic role was still to wait and weep. In this war they wait and work. This is giving them, I believe, a new sense of pride, a new feeling of unity with their men, a stronger sense of citizenship, a new feeling of responsibility and independence, and a point of view



whose horizons have widened from the four walls of the home to the four continents.

In the First World War, women were just as anxious to help, but their efforts to do so through the only avenues open to them were most painfully futile. A few went "over there" as nurses, or to serve in canteens, a few found work in munition factories. But, for the most women, helping the war boiled down to rolling bandages, or taking First Aid courses which not one in a thousand ever had a chance to apply in a war casualty, and which most of them promptly forgot.

How pale this all seems beside the deep satisfaction which a woman of today knows who has made a rubber boat which may save the life of her aviator husband, or helped to fashion a bullet which may avenge her son.

By being given a real part in this war, women have grown in stature, not only in their own eyes, but in those of their men. It seems significant to me, reading the articles in this book, that there has been almost no attempt to explain women workers, or to belittle the part they play, as there once was. This augurs well for the future of our whole social structure. It rings down the curtain, I hope, on our long-drawn-out Battle of the Sexes.

Let us, therefore, snatching up the gains from this world catastrophe, determine that when peace has come we shall have the goodwill and the intelligence to make those gains permanent, and to build, with God's help, a civilization worthy of the men and women who have died to preserve it.

Management - 1942 Model

by

Carolyn Anspacher

San Francisco Chronicle, San Francisco, California

THIS is a young man's war.

It takes youth to live valorously, to die gallantly, to dream defiantly.

Off-hand it would seem that America has no time for dreams.

It is late, the critics say, later than we realize. And dreams take time.

But today's dreams are born of sturdy stuff. And today's dreamers, curiously, are realists—men, young in years and young in spirit, whose dreams are geared toward victory.

There is nothing phantasmagoric about K. T. Keller, Chrysler's production genius. There is nothing nebulous about Charlie Moore, Josiina Hendy's unwearing dynamo. Apparently earth-bound are such men as "Dutch" Kindelberger, Harlow Curtice, Donald Douglas, Charles White, Henry Kaiser, the Gross brothers, E. O. Wese, W. P. Brown.

These are a few of today's dreamers whose energized visions are weaving a pattern for tomorrow's peace.

Their "chick-cumming fancies" are producing no chimeras, but planes and tanks and ships and guns and bullets.

It's done this way.

An ancient foundry dozes in the sun along with its morning watchman. By in a straggly pear orchard covers slumbering acres. There are memories of a place once rich, now a little shabby.

Twenty months ago a six-and-a-half-foot tall Californian went to Europe as a member of the Harriman mission. He watched British production. He heard the sound of blitz. He knew the tempo of modern war was furiissimo and was sweeping the world like an epidemic.

All during his trip Charles Moore hoarded his dreams, he came home to California and went to work on their realization.

In another, more peaceful time, Moore's program might have been catalogued by psychiatrists as indicative of lurking delusions of grandeur.

He took over the century-old Hendy Foundry in Sunnyvale, with its pear orchard, its pigeons, its few straggling tenements.

In two weeks the orchard was gone. In two months most of the old machinery had been converted to new purposes. In less than two years the plant was awarded the coveted Army-Navy "E" for outstanding production of war materials. Firm officials say it is turning out more

marine engines and torpedo mounts more quickly than any similar organization in the world.

People speak glibly of miracles. Yet miracles, these days, are cheap.

Every moment of every day, throughout the length and breadth of this country, miracles of this same sort are being wrought by men like Charles Moore—men impatient of delays and more impatient of antiquated traditions; men who are proving that democracy can generate efficiency and achievement.

Scrapped for the duration and probably forever is the threadbare doctrine of American industry—jungle competition.

America's new Titans are rugged, all right, and most of them are individualists. They have to be. But consciously or unconsciously willingly or unwillingly, they have adopted certain broad tenets of cooperation.

The new attitude, the new psychology, sloughs condescending paternalism, substitutes in its stead an interchange of energies.

Looming today is a greater degree of cooperation between labor and management than ever before in the nation's history—not because it's pretty and noble and idealistic, but because it's expedient and, further, because it spells progress.

This demonstration of industrial unity—this integration of heretofore antipathetic factions—is still in its infancy, but it is growing—largely through the resiliency, the adaptability, and the accessibility of younger men leading the battle of production.

Now are the labor-management committees—the so-called "Victory Committees" mushrooming throughout the country. Out of them will come social gains for labor, production gains for management.

It sounds very cozy. Actually, it is very cozy and will become more so as time races on.

In this vastly altered industrial picture, with its relocations and dislocations, women are assuming more and more dominant roles. And it is a tribute to the younger industrialists that they have accepted this almost fantastic conversion of man-power into woman-power with such grace.

A decade ago there might have been an attempt at exploitation of feminine workers. Today there is a kid-glove consideration of this complex and confusing problem that reaches so deep into the heart of the nation.

Absorbed though they are with the job of meeting accelerated production schedules despite material shortages, individual industrial leaders, for the most part, are as cognizant of impending sociological changes as labor and government.

Net result is that for the first time management finds itself wallowing in the past and hitherto virtually uncharted sea of social service.

Directing destinies of a war plant today is tantamount to being a dean of women. And, catapulted into this new role, industrialists are scouring the country to find wise and sympathetic women counselors to assist in solution of feminine industrial problems.

They are training forewomen instead of foremen. They are intent upon installing adequate restroom facilities to meet feminine needs. They are establishing special training courses geared to the feminine mind.

They have gone into the business of designing proper working costumes. They are concerned today with the puzzling task of coping objectively with the omnipresent battle of the sexes.

It has been said this is a war of firsts. It is a war of firsts on every front.

On the production front, management, young vigorous management, is halting in its tracks to give thought to problems of housing, to problems of child care.

Curiously, it has now become apparent that changing diapers and changing shifts are part and parcel of the same picture.

Acknowledging this, industrialists are closeted hours each day with nutritionists, child psychologists, kindergarten experts. It's a far cry from the good old "let them eat cake" days.

In Southern California one plane manufacturer wearied of waiting for State and Federal solution of the problem of what to do with young children of mothers working in his plant. So, somewhat wryly, he purchased a large estate adjacent to his factory, installed the area's most distinguished experts in the field of child care, and now operates a nursery and progressive school on a 24-hour-a-day basis.

This, according to the manufacturer, is not a generous gesture, feebly executed to pacify discontented workers. The nursery school, he feels, is an insurance policy, not alone for himself, nor for his workers, but for democracy.

This particular type of insurance, required because of mounting human needs, is perhaps as great a miracle as this war has produced.

And significantly, the underwriters are not battle-scarred veterans of past labor-management disputes, but industrial pioneers willing to gamble on the future.

In spirit America has returned to her covered-wagon days.

The rush toward new frontiers, new horizons, is just beginning. And in the vanguard are this nation's new industrialists, still young enough to dream defiantly, still intrepid enough to play tomorrow across the board.



"They Are Doing Wonders"

by

Marcia Winn

Chicago Tribune, Chicago, Illinois

THEY started out with ten girls and a job setter and a foreman. One of the girls had been a manicurist. One was from a dime store. Three had clerked at the A. & P., and had prowess only at tossing potatoes in a sack or estimating how many prunes went into a pound. Three had been housemaids. One had been a cook in a serve-yourself arcade. The ranch had been a stenographer.

What they needed was a tool shop. They also needed men, skilled machinists and tool-makers. But every good man they could get their

hands on was needed elsewhere in the vast metallurgical plant which had expanded 2,600 per cent in a suddenly isolated America's need for tungsten and palladium and tantalum. What to do?

They had a good man as foreman, and they had a good man as job-setter, and they had ten girls. So they started out on what they were sure was the road to failure.

"Those girls weren't afraid to get their hands dirty," the president of the vast plant observed proudly. "They weren't afraid to work. They put on overalls and tied up their hair or cut it off. And in twelve weeks they were making 900 different kinds of tools and making them well.

"You can't tell me anything about women and how they work. I know. They are excellent. In many cases they are better than men. They work harder and longer and take endless pains to achieve the perfection we must have."

*****

The scene now shifts 3,000 miles westward to the Santa Clara Valley in California and Del Monte cannery No. 3 of the California Packing Company. Calpack, they call it. And Robert Eames, president, a doughty, modest figure in brown, leads the way through a maze of machines which de-stem grapes, split peaches, core pears, and slice cherries. He pauses abruptly beside a great black machine which screams and sizzles and belches out row upon row of tin cans.

"A double-seaming machine," he says. "Always had men on them. We thought we'd experiment with a few women at a time. Well, would you believe it if I told you those women are doing a better job than any men we ever had? Men will let a can go by if it *seems* to be all right. Women won't let it by unless it *is* all right. There is a world of difference. Call it conscience, if you will, but we welcome it."

*****

Again the scene shifts, this time to the barrage-balloon-dotted sector of southern California which houses most of the Pacific Coast's aircraft industry, now 100 per cent converted to war. You are at Vultee field, and Hugh Fenwick, the dying vice-president, leads you through the great plant where the rugged little basic trainer, Valiant, is built. "Looks like a Rube Goldberg drawing, doesn't it?" he asks merrily, waving at the assembly line which curves in and out, a double S, until the finished plane flies out and off to war.

"See this line?" indicating a fuselage assembly. "First all-woman assembly line of a major part in the history of aircraft. Look at those dollies' fingers go!" A mile or so further he pauses beside a hooded woman

who wields a long leaping-flamed gas torch as delicately as an etching needle. "Hardest job in the place," he says. "A hell of a job. Aluminum welding. High volatility, you know. Crystallizes readily in heat. All women doing it. Can't beat them."

"Listen," he says at last, after innumerable stops to show intricate work being done by women. "I'll tell you the truth. We hired women with our fingers crossed, and I mean crossed. We hired 20 and thought they'd be gone in a month. That was 18 months ago. We still have 15 of those dollies. The other five quit because they got married. Well, we think so much of women now we plan to have them do 50 per cent of all our work before this year is out."

Now jump up to Portland, Oregon, to the Iron Fireman Foundry Company. The boys here used to make stokers. Now they make more than 700 delicate, high-tolerance parts for airplanes, submarines, and tanks. In May the foundry contained no women. By August it had 700 at work on turret locks for the M-4 tanks, cable drums for heavy bombers, gun mounts for bombardiers, bomb bays for 2-engine bombers, telescope closures for submarines.

"We were surprised at what they could do," H. C. Carter, superintendent, says. "They are doing wonders. They make up in interest what they lack in ability, and that makes for accomplishment."

Naturally, these glimpses are only a skeletal view of women in war production. Anywhere you look, except in the interior of an M-4 tank, you will find women at work in this eleventh month of the war. You'll find them riveting the aluminum ribs of Boeing's great B-17F, testing the propellors of the Douglas C-54 transport, clambering over the 441-foot hull of Kaiser ships, their faces grotesque and grim in the strange blue light from arc torches as they weld massive steel plates into position, making shells and fuses and anti-aircraft guns, filling little silk bags with powder and filling yellow rubber gloves with air, making plastic noses for bombers and windshields for jeeps, making pontoon floats and gas masks and barrage balloons, making a name for themselves as quiet, sturdy builders for victory. And everywhere you'll hear executives swallowing their own words of a year ago when they said, "But we can't produce with women"—for they are producing.

The use of women in industry is no novelty, nor has it been since the very late Mr. Butterick invented the paper dress pattern. But the enforced use now of women in such vast numbers, working on products that often are massive in size, has raised definite new problems.

Weight is one of the more difficult problems. Many states limit by law the amount of weight a woman may lift. In California, for instance, this is 25 pounds. Industry is gradually overcoming this by devising machines to do the lifting.

Then there is the problem of woman's emotional make-up and its effect on her production capacity. To work efficiently she must be released from anxiety at home, such as fear for her children's welfare. Many industries, notably the aircraft companies, now have their own day nurseries. If a woman worker's husband or son or sweetheart in the armed forces suddenly is sent overseas, her work slumps like the down car on a roller coaster. Many companies now are overcoming this with organized counsel and encouragement.

Industry has found that men show more initiative, but women show more ingenuity. Women come up with some of the strangest time-and-labor-saving devices anyone ever dreamed of, the miracle is that they work. A woman at Douglas aircraft, who used to teach Latin in Oklahoma City, got a little tired of seeing 11 steps go into the painting of strips of color on a tube. "I could do it with this—and this—and this," she said, blocking out three brief steps. And she did. She saved eight hours a plane for them.

Industry has long known that woman had manual dexterity. They knew she was quick, fast, and accurate on finger-twiddling work. But they thought she would become hysterical after eight hours at a lathe or punch press or behind a bucking riven. They thought she was a neurotic busybody and trouble-maker who could get along passably in a shop with women but never with men. They thought if the battles of 1942 had to be won with material invented, perfected, and produced in what is left of 1942, and if women had to help invent, perfect, and produce, the United States might as well pull the covers over its head right now and go back to sleep.

The best and only answer to all of these arguments lies in the superb production figures of industry. If you want to know what they are, please conduct your own fight with the censors. In conclusion, it might be worth while to quote the president of one of the largest companies in America:

"I'll deny it until the end of my days if you use my name. Listen, girl, I'll deny that I ever saw you. But if you want to know how I feel, I'll tell you," and he broke into a discreet whisper. "If I had my way now, I'd say, 'To hell with the men. Give me women.' They," and he looked surreptitiously around, "... never come to work with a hangover."



Training for Victory

by

Bess Stephenson

Fort Worth Star-Telegram, Fort Worth, Texas

PRE-EMPLOYMENT training of women for war industry, as you learn readily on a tour of 29 war plants, is not half so important from an actual training standpoint as from that of character testing. The important training comes after they go on the job, when their work is fixed and must be done in rhythm with the rest of a great army of production soldiers.

Any woman with normally active mind and good health can learn quickly to do any of the jobs open (or likely to be open) to women in war industry. No such job, whether it be riveting a plane together or welding a Liberty Ship, is actually much more complicated than handling a can opener in the kitchen. It may be heavier and harder and more exacting work, but no more difficult to comprehend.

So the training programs, set up in all centers of war production, are to acquaint the women in advance with strange new tools and get them over the first qualms of strange new factory work. The Government has established training courses in connection with existing school facilities in virtually every city within a radius of 300 miles of a war plant. These are schools for pre-employment training.

Enrollment in these schools is in all cases through the United States Employment Service. The woman who wants work in a war plant makes application to the USES and (if all her qualifications are in order) is assigned to a school. She goes to school at no cost and at no pay to train for the job she wants. It may be welding, riveting, machine operation, drafting, bench electrical work, or inspection.

These courses run from four to ten weeks, depending on the job and the urgency of the local employment situation.

In the beginning, for example, full and thorough pre-employment training was required by the West Coast aircraft plants. Now, urgently in need of more and more women workers, they go into training schools and take women who have only just begun their courses; they will finish training them when the women go on the jobs. They are taking on women with very little or none at all of the pre-employment training.

Actual job training is just as effective and thorough as is the training in pre-employment schools, but the war factories don't always get the best

type of women this way. They just have to guess and hope they will. On the other hand, the woman who has finished a no-pay training course may be depended upon to have some strength of character.

The woman who does go to school for a full six, eight, or ten weeks has passed a fairly strenuous character test. She has probably gone to school six hours a day, seven days a week, and held down her regular job in the meantime. She has had no extra pay for it. That means she's in earnest about it and can stand the noise, the long hours on her feet, and the factory discipline. It means she can go six hours without smoking a cigarette or gabbing over the telephone or powdering her nose or going out for a coca-cola.

So these facts argue for pre-employment training, such as the Government offers in all war areas. On-the-job training, however, is so effective that no conscientious woman need feel too scared about it, if she gets her job call before she finishes her training course. Her job education goes on after she gets in the factory and she can learn anything she wants to learn.

On-the-job training has been worked out so effectively in all war plants that it's only the fool or the disinterested who can't learn quickly and be sure of herself and her job in a very short time. Job-instruction training is as extensive as job training, itself. Every foreman, every leaderman, every group leader in the war plants soon becomes a very good and thorough teacher. They are constantly at work on training within industry.

The course in job-instruction training is open, in some cases, to women as well as men. It leads to advancement as foreman and group leaders. It is a course to teach teachers. These teachers know how to make first workers out of raw factory recruits in the shortest time possible and with the surest results. They are challenged by the slogan: "If the worker hasn't learned, the instructor hasn't taught."

Foresighted enough to know that this war will require the employment of thousands and thousands of untrained workers, every war plant has its work broken down into the simplest operations possible. Skilled machinists are no longer available and are no longer really essential in the majority of plant operations. They've done their job in advance and well. What is required now is skilled machine operators—and a woman can become one as readily as an untrained man. Machinists have made the machine operator's work simple by designing amazing machines. They do everything but talk back to you.

One of the customary differences between men and women is that men will do a lot of thinking to get out of working too hard and women will do a lot of work to get out of thinking too hard. So men have done an awful lot of thinking to keep the war factory jobs simple, easy to learn, and not too strenuous. Women don't have to work too hard for their capacities and they don't have to think too hard for their habits.

No one job in any of the 29 factories visited by the All-Girl War Production Tour seemed to be either a back-breaker or a brain-wrecker. The jobs seem relatively easy and well-thought out, very well. So extensive pre-employment training is not absolutely necessary. Some training is essential for some jobs, of course, (welding and riveting, for example) so that women may acquire knowledge of their tools before they are turned loose on a job. But, as mentioned before, they needn't feel too scared if their training is cut short.

Virtually all the war factories have on-the-job training and on-the-job schools which run after working hours. Any worker with ambition or curiosity may attend school two hours a day, three days a week perhaps, and learn all there is to know about her particular craft or any other craft of that industry she is interested in. In many cases the classes are conducted by the foremen themselves, who know exactly what workers need to know. In most of the schools, workers are given diplomas (and often pay-raises) as they finish one course and enroll for another. More learning and more skill in any event means more pay.

Time being short, there is little or no attempt in these factory training courses to make theorists or engineers or scientists out of the war workers. They aim simply to make competent job specialists out of them. Most factories need more engineers and scientists, but there isn't time to educate them. So each worker is expected to make herself competent and fast on the job she is assigned to. She is entitled to advance to more complicated jobs as she learns them—after working hours in factory classrooms.

Training of women on the job and in classrooms after working hours is already heading toward the inevitable. There will be women foremen before the war is over. So far virtually all foremen are men. But the inevitable trend is women as well as men on these jobs of work leadership. Women themselves don't like the idea, too much, but they will eventually see that the shortage of foremen is as acute as the shortage of workers.

So job-instruction classes are being opened to women. There's no reason why they shouldn't be good job pedagogs.

They Are Dependable

by

Nell Giles

Boston Globe, Boston, Massachusetts

AMERICAN industry is pushing the clock of double-quick time in factories, machine shops, mines, and factories, and back streets.

There are a few [illegible] in these [illegible] are women [illegible] and a few factories with [illegible] what was previously [illegible] data published in [illegible] two and a half [illegible] in many women [illegible] data have been added.

How good are these [illegible] women workers who [illegible] from the kitchen, the office, the school room? Most important, how dependable are they?

Absenteeism has long been a great black mark in women's industry. A report made by the Boston Elastic Company showed that 100-girl absences among women, for a year's time, were 2.4 times as numerous as among men. A British report made by a Welfare Superintendent in the summer of 1941 showed that approximately 8% of the female staff [illegible] could be classed as a permanent absentee list.

Does women, then, be defended about it? Does it [illegible] the pressure put on industry for increased production?

Manpower in World War II is still a subject too new to get statistical about, but it can be studied with enough recent data, we can report that the [illegible] in American factories are registering a temperature in the [illegible] women at war.

Not [illegible] women [illegible] the statistics we questioned in the recent time in 24 factories in 4 industrial centers, found women but a shortage in man-power make it necessary to employ women who have [illegible] to work [illegible].

> Mr. Burdett, president of the Lynn Foundry Manufacturing Company, Portland, Ore., "Women are as reliable as men [illegible] but what matters is [illegible] the best will [illegible] Men have a little [illegible] but women work.

Executives in the Lockheed and Vega plane factories said that women were [illegible] Vega's [illegible] "What makes them especially valuable is their [illegible] women have a great [illegible] doing something to help win the

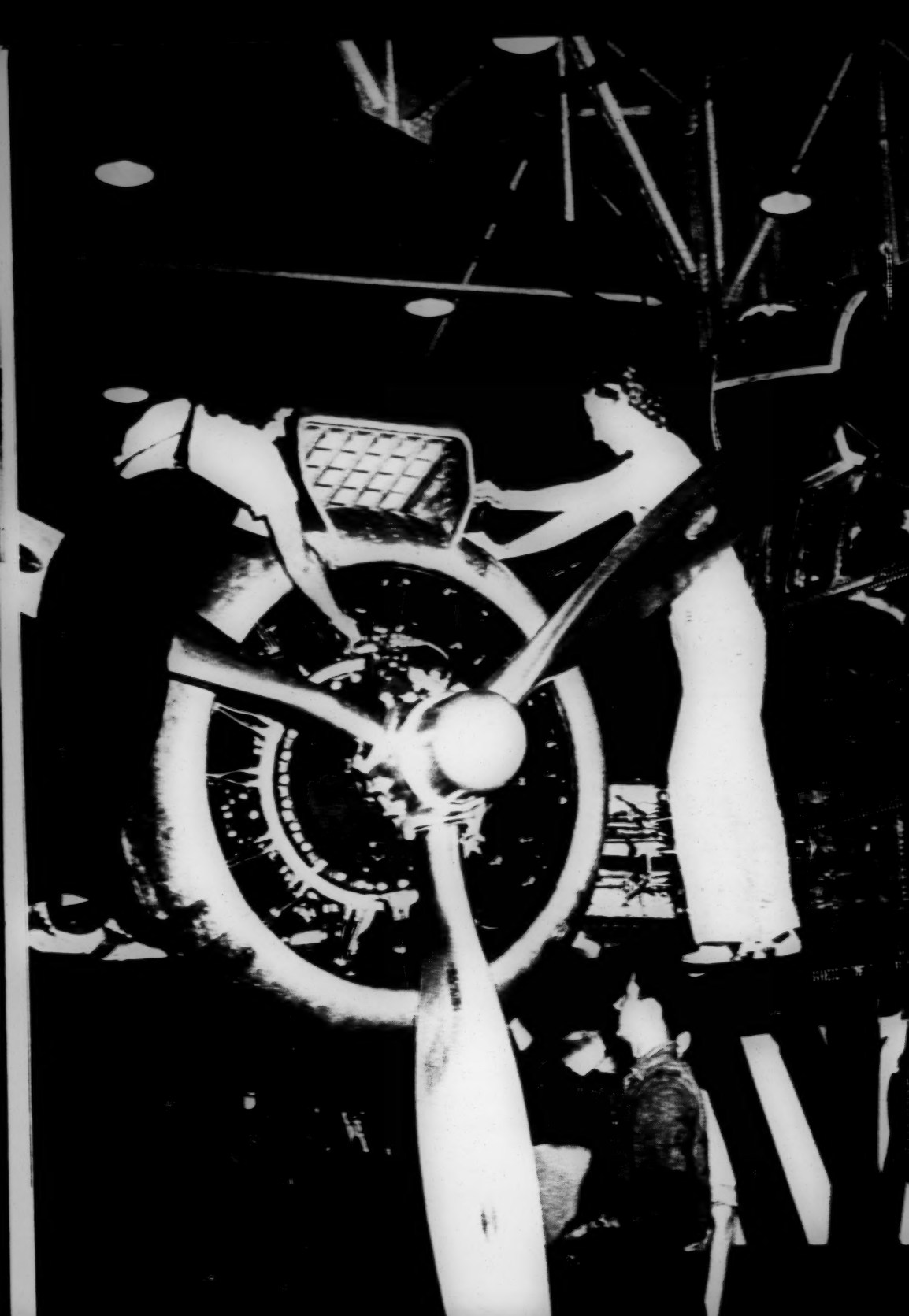


There are eight final inspection steps in the production of Pratt & Whitney aircraft engines—and a woman does each part of this vital work on a line in the huge aircraft factories.

war. We have not found them personally ambitious, as men often are, but they are content to do the same job over and over. This may be a lack of ambition, but if so, it is a valuable quality, and we need more of it to win the war.

R. G. Graham, vice-president of the Goodrich Company, gave the same woman at war a pat on the back with his resounding statement: "It's the working women who are going to win this war."

Only one manufacturer, who will be long remembered by those in our town, disagreed with the general feeling about the country that women at war are simply nervous and a lot in the road. Fifteen newspaper women rushed him with the description small and neat and then quoted him the country over, without elaboration. "I am not wholly enthusiastic about women workers. I have found them a disturbing





influence." He did, indeed. What he really found was a little unprintable trouble with an undesirable group of women rivet-buckers who were more interested in the buck than in the rivet.

The three official reasons industry gives for absenteeism are: illness, accidents, and personal. But from experience and observation, I would add *monotony*.

The most monotonous work in industry is certainly found in a cannery . . . but the work is seasonal, and by the time summer comes around again a girl can forget, with good pay, how tiresome it was to impale a peach on a revolving knife fifty times a minute.

But the gun clip business, these days, is not seasonal. In the Firestone factory at Akron are a number of big machines . . . all operated by women . . . which make a cartridge clip out of a straight, ribbon-like piece of steel almost at the rate of one every five seconds. The steel is threaded into the machine, is shaped and cut in one operation. And all the girl behind the machine has to do is keep her eyes on that moving row of steel clips, and one hand grasping a rope above her head which is attached to a lever. The instant there is a traffic jam on the row of clips, she must pull the rope and stop the machine. You walk down the aisle and see girls on either side . . . eyes intent on the machines and arms hanging on to those ropes! The monotony is paralyzing.

And yet, it was in this factory that I heard the comment, "If the calibre of men in Congress were equal to the calibre of our industrial workers, the war would be a shorter story."

The bottleneck produced by absenteeism is combatted in factories with a very sound social program.

First, working conditions in factories are more pleasant than living conditions in the homes of most factory workers.

We saw only one factory (the Willys Overland plant, converted to jeeps) where the equipment, the rest rooms, and the cafeterias were not equal to the best that money could buy. (The 30-year old Willys plant, poorly lighted and using open-belt and pulley machines, however, is the only automobile plant which hasn't had a strike since the war began.) We saw marble washrooms; electric cook stoves; chromium-barred, spotlessly clean cafeterias; recreation rooms, as fine as any city club facilities.

Second, an active program of recreation relieves the monotony.

> In one factory we visited . . . the Thompson Valve Company in Cleveland . . . dances and steak breakfasts are planned regularly for the "swing shift," and these are paid for as often by the employers as by the employees.
>
> Bowling teams are popular in almost every factory. The

city's movie houses (and this is true from Seattle as far east as the Great Lakes, at least) have a midnight show for the late workers.

From coast to coast, department stores are adjusting their hours not only to stagger the town's traffic, but to provide a time when factory workers can conveniently shop. *And all this adjustment of civilian life to industry cuts down absenteeism in factories.*

All this prevents "Susie, the beautiful welder," from taking the day off to see a movie or shop.

Third, there is a very active program of propaganda pinned up on the factory bulletin boards and printed in the employees' magazines and papers.

> The Pullman Company of Hammond, Ind. . . . converted without reservation to the making of those comfortable General Lee tanks! . . . has a large checkerboard in front of one factory with this slogan: "Absenteeism makes their hearts beat longer" . . . flanked by drawings of Adolf and Tojo. And on the board are listed the attendance ratings of various production departments.
>
> The Iron Fireman Company of Portland prints a "Jap Helper Department" cartoon in each issue of its twice-monthly news sheet.
>
> The workers in Mr. Kaiser's shipyards are appealed to with a letter such as the one addressed to "Joe Layoff" printed in Kaiser's bi-weekly magazine for employees . . . and it could just as well be addressed to "Josephine Layoff," who also is a welder for Kaiser.
>
> The Firestone problem of absenteeism is handled by a letter written jointly by the manager of the department and the head of the labor group. The letter is sent to the employee's home and mentions the day absent and also the fact that on Bataan there were no absentees. Many times the family of the person who has skipped work does not know of the absenteeism, and a little added pressure from home helps the effect of the letter.

Fourth, over the entire country, doctors interested in industrial health are publicizing the fact that women are not the weaker sex, and that except for heavy lifting they are capable of doing any factory work that men can do. Thus an attempt is made to break down the one- and two-day absences which give women a higher percentage of absenteeism than men.

Victory in the Hands of Women

by

Janet Owen

New York Herald Tribune, New York City

THE new symbol for victory in the war effort is a pair of woman's hands.

Industry, losing its men, has turned to women to finish the job of war production. There can be no "man behind the gun," from now on, unless there is a woman behind the machine to make the gun.

As the mind's eye of industry sees them, her hands are small but flexible, sensitive but strong, delicate, perhaps, but very agile. They are neat, and not grudy with lacquer talons. They are eager. They are efficient.

Some leaders of war industry will tell you they are more efficient than the bigger, brawny hands that preceded them. From coast to coast, in plants where vital materials of war are made, there is a new byword. Industry and government officials use it with a quality of hope and belief in their voices, as though they were saying "Open Sesame." The byword is "women's nimble fingers."

Paul V. McNutt knew these facts when recently, as Manpower Commissioner, he called for woman-power. He did not appoint a deputy to do it for him, or leave it to a sub-commission. Washington today looks upon industrial man-power and woman-power as one and the same thing—power—the make or break of victory.

Fifteen newspaper women also know these facts, intimately, from personal experience. On our group tour of West Coast and Midwestern war plants, made a few weeks ago through the assistance of the National Association of Manufacturers, we saw evidence of the way women have taken over the job of war production bristling from behind the machines of nearly every type of industry in the country.

Women, management told us, new as they are at most of their war industry jobs, are not only a match for men workers, but in many respects their superiors. Their "nimble fingers" make them far more skillful at all forms of precision work. Their patience keeps them from becoming irritable at work that involves monotonous motions. The very newness of their jobs lights up their efforts with a spark of eagerness which was missing and missed before.

The twenty-nine plants visited were a fair cross-section of American war production. They included aircraft building, ship building, machine crafts, meat and fruit packing, munitions making, tank and jeep assemblage, chemical, glass, steel, rubber, and synthetic rubber manufacture, and other fields of vital industry.

Consensus was that women have stepped up the speed of production.

Southern California's big centre of aircraft industry spoke in a unison voice of approval. Every one of the executives of six major companies had a good word to say for the effect of women's entrance into the field of plane-making.

Harry Woodhead, president of the Consolidated Aircraft Corporation, which employed 7,500 women at the time of the tour, said:

"Our production rate shot up immediately in the department where we used a large percentage of women. We'd like at least fifty per cent women, and I believe that after the war many of them willl stay on. The jobs they do best—riveting, welding, and electrical work—willl come to be regarded as women's work, war or no war."

R. Randall Irwin, of the closely affiliated Lockheed and Vega Corporations, said: "We find we gain in production when women work with men."

Robert E. Gross, president of Vega, which employs women in practically all departments, told of increased production following the advent of women, and added: "In our factory there is virtuallly no job a woman cannot fill."

Going into details, another Vega executive, H. E. Ryker, vice-president in charge of manufacturing, said that women had "shown up the men" on cable-splicing. Telephone and electric companies have held that only a man can splice cable, but Mr. Ryker says: "Women are expert at it. They are much better than men ever were."

At Vultee Aircraft's handsome plant at Downey, Calif., we found not only the executives gearing together in a chant of praise for women as workers, but an outstanding example of what women are contributing to industry.

G. M. Williams, vice-chairman of the board, and R. A. Lawson, works manager of the Vultee Field Division, separately gave identical explanations of why "production boomed all over the plant" when women went into the shops. The women were eager to prove they were good workers, Messrs. Williams and Lawson said, and with their desire spurred by an awareness that the men at first were not too happy over

having girls edging into their province, the girls took hold of their jobs fervently. They were not only conscientious, but full of zeal and initiative.

Faced with the challenge of the girls' results, the men workers took on an attitude of "Hell, they can't do this to us," and geared up their own efforts to match the girls'. Now, the executives said, the girls and the men that remain have settled down together into a harmonious cooperation that outstrips the highest efficiency of all preceding periods.

Mr. Williams said he had found that fuselage work in particular moves more rapidly under women's "more nimble fingers," and that "women don't fumble a rivet as often as men do." Besides such assets based on natural skill, there are the less tangible assets of the typical feminine attitude.

Case in point is the girl at Vultee who sits today at a table, ambidextrously using the "power wrenches." These tools are hung up over her head, and brought down into play alternately, by pulley system. Her predecessor at that spot was a man. He, however, had only one wrench to work.

This man power-wrencher was bored. He complained that his arm got tired. When the girl replaced him, new at the job and unbored, it did not occur to her to think about her arm getting tired. Her only comment was, what should she do with the spare hand that wasn't working? So they rigged her up a second wrench, and now two wrenches function instead of one.

Even one aircraft plant executive who created a national stir by telling us that some of the girls in his plant were causing a disturbance by not immediately showing a strictly businesslike attitude, said that "woman's dexterity in sub-assembly work is superior to man's."

Outside the aircraft industry, the chorus of praise continued. Charles E. Wilson, president of the next-to-limitless General Motors Corporation, said at the G. M. C. home offices in Detroit:

"We could get more production here if we had better spirit among the workers. Women, who at the moment make up ten per cent of the entire corporation's production workers, are more enthusiastic and showing much better spirit than the men." He said that in the Buffalo and Tonawanda Chevrolet plants General Motors hoped to boost the small total of 179 women workers to 5,000 within the year.

A. W. Eames, president of the Del Monte plant of the California Packing Company, at San José, said his organization had found that "women do as well and often better than men on all machines which they

are physically able to operate.'" Seventy-five percent of Calpack workers now are women, and the company expects that before long the percentage may rise to ninety-five.

A remark made by T. H. Banfield, president of the Iron Fireman Stoker Company, Portland, Ore., which has been converted into a spawning bed of aircraft motor parts since we went to war, pointed to one serious question that arises from the establishment of women as efficient industrial workers.

"Many women are far superior to the men in equivalent jobs," he said, "and the men must be on their toes to compete. The company will continue to employ women after the war, if they are willing to continue working." His company, he added, was the first industrial concern in Portland to hire women, but that hadn't done him any good personally. Two maids in his home quit, to take jobs in his plant.

The question thrusts itself forward—what will happen after the war? If industrial management has found women more efficient than men in at least certain types of work, as the evidence overwhelmingly shows, surely management will consider it only sound economy to keep women on the payroll after the emergency is over. And women who have discovered how to average forty to ninety dollars a week will scarcely make a rush back to domestic jobs as maids, waitresses, manicurists, and the like which formerly netted them no more than fifteen to thirty dollars.

An industrial matriarchy looms as a possibility.

Washington has estimated that by Christmas, 1943, there will be five-and-a-half to seven million women on the factory front. Yet heads of industry have vowed to take back into their fold the men who were called away to war. And some, like Mr. Lawson of Vultee, stand for the principle that as long as society continues to consider man the head of the family when a choice must be made, the man, not the woman, gets the job. So there is a quandary to come out of the excellent work now being done by the woman behind the machine.

Perhaps she will solve it herself. Many young women we talked with on the tour were burning with a patriotic desire to "do their bit" in the war effort, but frankly said: "When it is over, I want to go home and have babies."

One way or the other, for the nonce the arsenal of democracy is fast becoming American womanhood's baby. Napoleon's statement that an army marches on its stomach could be modernized to read: the war production line moves on the hands of women.

Some Outstanding Women in Industry



Dr. Lillian M. Gilbreth
—Consulting Engineer



Catherine Ferguson
—Metallurgist



Ruth Wallgren
—Mechanical Draftsman



Vivian Kellems
—Manufacturer of
Electrical Equipment



Estella C. MacDonald
—Treasurer of a
Construction Company



Katherine Blodgett
—Research Physicist



Dr. Hertha Ayrton
—Research Engineer

An Industrial Revolution?

by

Amy Porter

Associated Press, New York

THERE were the two girl workers in the cafeteria of the Firestone Tire and Rubber Company, talking about their work.

One boasted she was learning to read a micrometer "to make things come out right to a thousandth of an inch."

The other girl, impressed, said, "That's wonderful. How many thousandths do you suppose there are in an inch?"

The micrometer-reader answered, "I don't know, but there must be millions."

There are many little stories like this circulating in war plants, showing that the new war-working women don't quite know what it's all about.

Nevertheless, in spite of minor confusions, these women have managed to accomplish an industrial revolution all their own within a very short time.

They have brought about the first large-scale unionization of women.

They have won the first with-teeth-in-it assurance of equal pay in a recent War Labor Board decision.

They have caused the first wholesale setting aside of protective legislation for women.

These three developments are of more importance to the future status of women in industry than the mere multiplication of their numbers.

Of the three, unionization probably will have the most far-reaching effect. It marks a sharp break with the past. It means that men workers, who traditionally have disliked and feared the competition of women workers, now are accepting women into their fold. It means industrial suffrage for women, who heretofore have depended upon men, management, and the law to decide when and where and how they shall work.

Late in September the International Brotherhood of Boilermakers (AFL) voted to accept women into the union, and already more than 3,000 women at the Kaiser shipyards in Portland have got their union cards.

Yet the Boilermakers, an old and conservative brotherhood of craftsmen, in the summer had been violently opposed to admitting women.

The opposition trotted out every possible argument, including ridicule.

Imagine a lady boilermaker, they said. Imagine a meeting of the Boilermakers' Sewing Circle.

Besides, a woman wasn't strong enough for the work. With the law forbidding her to lift more than 25 pounds, how could she wield a sledge-hammer? She would work for less pay than a man and so undercut labor standards. She would have a new-broom enthusiasm for her job and do her work so quickly as to cause a revision of speed standards. She would always be asking some man to help her. How about after the war? Wouldn't she keep the job a returning soldier needed? Her place was in the home anyway.

This was the state of affairs when we visited the Moore Dry Dock Company in California and found that the boilermakers and the machinists refused to permit women to do the work for which they were eminently suited—precision machine work, the operation of lathes, the making of molds. Management there charged that the rigidity of the union was holding back production.

But union self-interest won the day. The girls were going to work, obviously, with or without union blessing, because the country needed them. So, reluctantly, the union gave its blessing and renewed the strength—and dues—of thousands of women workers.

Oddly enough, women apparently took little part in the arguments. Judged by conversations with them, they were pretty indifferent to the union, so long as they were allowed to work.

Evelyn Dishman, 17-year-old welder at the Kaiser yards (closed AFL shop), didn't know or care whether the union would admit her (it wouldn't at that time), and issued her a work permit instead. She wiped the sweat from her face with a grimy glove and told me, "All I know about the union is I have to pay them $30 within 30 days for something, and it's all right with me as long as I keep on making $62.40 a week."

Miss Dishman got her card as a member of local 72 the first week in October.

The Boilermakers were almost the last outpost of union resistance to women. On the West Coast generally, and particularly in the young, liberal-minded airplane industry, women are and for at least a year have been welcomed into the unions (mostly CIO). Everywhere vertical unions, whether CIO or AFL, admit women more readily than horizontal craft unions.

At the Iron Fireman Manufacturing Co., Portland, where women are so well treated they are ecstatic about their jobs, the International Association of Machinists, Aircraft Division, AFL, even offered bargain rates to recruit women members—$5 initiation and $1.50 a month dues, as against $10 and $15 initiation and $2 dues for men.



At the Lockheed and Vega aircraft plants (AFL vertical open shops), a union representative said women were joining faster than men.

There are no bars against women in the CIO unions of the automobile and rubber industries.

One feminine characteristic that pleases management and sometimes worries the unions is a tendency to break records for efficiency and speed.

Harry Woodhead, vice-president of Vultee, told us, "Our production rate shot up immediately in the departments where we used a large percentage of women," and his sentiment was echoed in many plants.

Women give a glad response to incentive systems, in force in Akron and in many East Coast plants. Apparently they like the idea of getting more pay for speedier work.

This doesn't help their popularity with male workers who fear the hated "speed up" of other days.

William O'Neil, explosive president of General Tire and Rubber, said:

That he sacrificed the women was not among the causes, but that never should that be.

The classic slum-dump story of Asian products the American women was threatened a fact with a knife. What he tried to dissuade her from making not more than the number amount of work.

I was listed to four arguments. She said "I've got two sons in his war and I'm going to turn out all the work I can. You get out of here and stay out."

The union members was confident. However, losing it was an isolated case. The spokesman for the United Rubber Workers of America said: Slum-dump charges are so much nonsense. The unions in and large are doing all that can to increase production. But speed-ups are unions and those new women workers don't understand that yet.

Women do understand the second phase of their female industrial revolution—getting equal pay with men for equal work.

Before the war, women's pay was consistently lower than men's—except in World War where such discrimination was a misdemeanor. And the unions condoned this situation.

Now the equal pay principle is acknowledged if not always used by The West Coast leads the country in putting the principle into practice. Eastern bare beginner rates for women are often lower. At the Buick Motor Park plant, women beginners get 85 cents an hour; men beginners, 95 cents. In the East, at Curtiss Wright, Bell Aircraft and General Motors plants, the unions charge that women are paid from 10 to 30 cents an hour less than men. Also promotion periods are longer for women than for men.

Unconstitutional, equal pay soon will be a cultural fact. Since the WLB declared for the principle in its decision in the test case of the Bethlehem Shipbuilding Company.

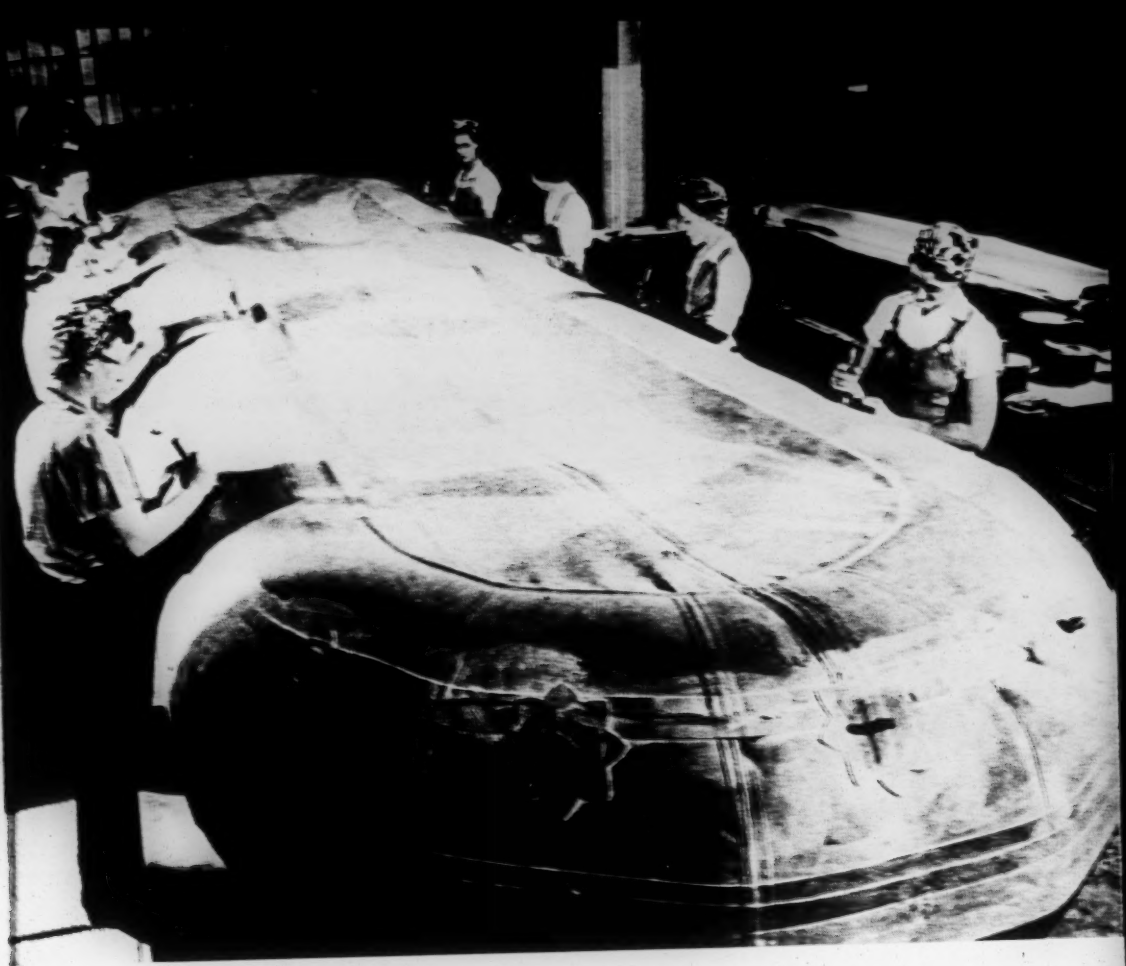
Perhaps the strongest possibility of the female industrial revolution is the adoption of protective laws for women workers.

Every industrial state has agreed, because of the emergency, to waive its laws limiting hours and conditions of work for women. In special cases.

Twenty states have laws providing for limiting eight hour work for married women. The maximum hours in California are nine a day, 54 a week. In Ohio and most other states nine a day, 54 a week.

Twenty-eight states have weekly hour limitations—48 hours in California, 48 in Ohio, nine 48 to 50 elsewhere. And there are considerable regulations about lifting, standing, sitting, resting.

But these laws are not aside in favor of full equality of women and for social, not emotional or sex-centered women and for certain types of war production jobs.



Now leading women's groups are beginning to wonder whether it might not be wise to repeal protective legislation entirely, trusting the women to make their own rules as they go along, just as men do. Besides, management gives evidence of realizing that good working conditions and reasonable hours promote efficiency.

The National Federation of Business and Professional Women's Clubs, the Women's Party, and the Women Lawyers' Association all feel that protective legislation is in effect discriminatory, and should be abolished to assure women workers real industrial equality.

For the duration, at least, women have won equal privileges, pay privileges, and the privilege of not being protected.

Whether the status quo will hold after the war, nobody knows. But a good many employers are willing to bet that they'll keep a fair share of their women employees, because they have proved so good.



A mother and daughter have fun lunch in the California sunshine, but not at home. We are sometimes here denied the place—somewhere outside an overage factory where the mother is employed in order essentially that her daughter is a member in the sun-essential employment.

Factory Housekeeping

by

Mary Hornaday

Washington Bureau of *Christian Science Monitor*, Boston, Mass.

ONCE their home problems are solved, women stand the routine, grime, and noise of war plants as well as or better than men.

That is the conclusion newspaperwomen visiting plants from coast to coast on a National Association of Manufacturers' tour arrived at after talks with employers, plant welfare experts, and women workers themselves. Much of the ease with which women are changing over from home to factory life, we agreed, is due to efficient "housekeeping" practiced in America's booming wartime factories.

"Floors wet with soapy water are a constant hazard to you and to all passers-by. Walk carefully and warn others," said one plant's safety rules.

"Mops, pails, brushes, soap, and other equipment should never be left in halls, aisles, or any place where unsuspecting passers-by will fall over them.

"Falls downstairs are frequently caused by the insecure footing of high-heeled shoes or by run-over slippers which give inadequate support."

How many women in the home could profit by these safety rules stringently enforced in the factory?

Noise of riveting and metal-cutting machines bothers some women when they first enter the factory, but not for long. Once they understand what each machine is for, the din is not as nerve-racking as that of crying babies or other household noises, the girls said.

At the Republic Steel Company's Cleveland plant where an official was discussing the possibility of putting women into the rolling mill, we asked: "Do you think women could stand this ear-splitting noise?"

"It's no worse than the chatter that goes on around a bridge table," he replied.

We found women taking to factory machines as easily as to electric cake-mixers and vacuum cleaners. As we toured the 29 plants, the similarity between processes women are being hired to do in war production and those they used to do at home—and are still doing on their day off—was striking.

A woman down on her knees cutting a sheet of steel with a burner's torch at the Moore Drydock Company in Oakland, California, was using

the same keen eye needed to guide a sewing machine along a cloth hem. At the Firestone Rubber Company in Akron, Ohio, women were using scrub brushes to roughen up areas where anchor ropes will be attached to barrage balloons. Instead of ironing out wrinkles in the family wash at home, another group of girls was taking them out of seams on rubber life belts.

We saw women who used to drive youngsters to school each morning now running tractors loaded with airplane parts down neat factory lanes labeled "MacArthur Avenue" and "Victory Boulevard." They are rolling up records as safe drivers, too.

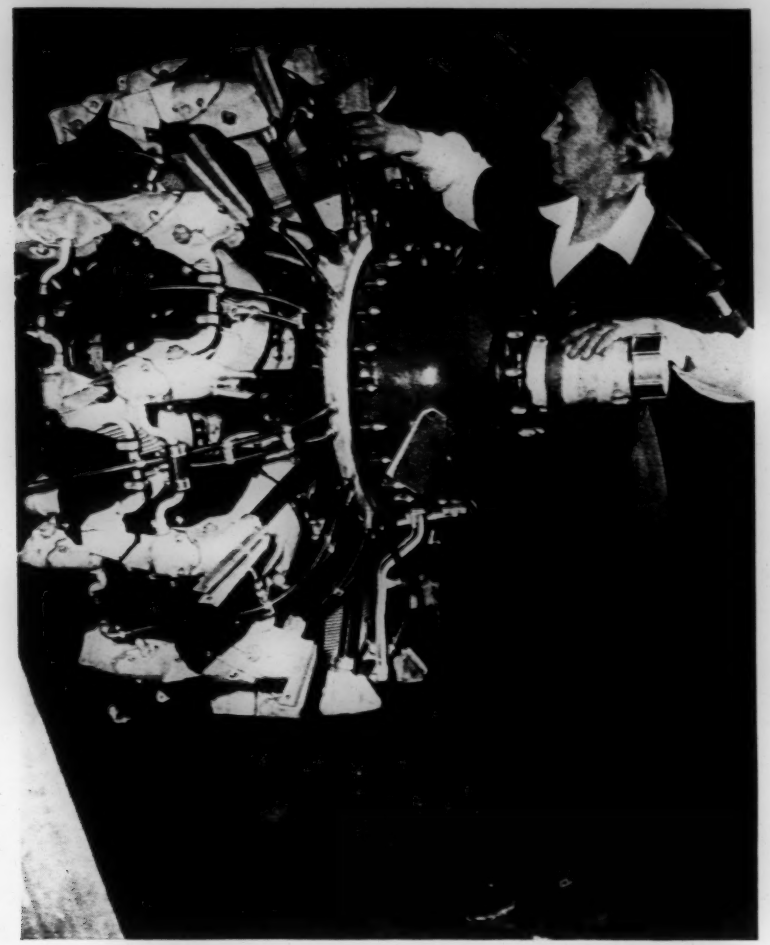
Introduction of women into factories on a large scale is already having its effect on feeding facilities, we discovered. There are two major feeding methods in use—to have workers "come and get it" at a cafeteria or to have the food taken to them in mobile canteens equipped to keep food hot or cold. Women aren't so accustomed as men are to carrying lunch pails back and forth to work, or to eating just sandwiches and cold foods besides their machines. Danger of sabotage from materials or instruments brought in lunch boxes has also encouraged factory feeding.

Special pride of one Midwest plant cafeteria that feeds thousands of workers "'round the clock" daily is birthday parties and soldiers' farewells staged at the rate of six or seven a day. For 75 cents the cafeteria reserves tables, and furnishes a cake big enough for 20 persons with the words "Happy Landings" or "Happy Birthday" inscribed across the top.

One plant had arranged, at the request of its women's personnel counselor, to let girl workers into the cafeteria for lunch a few minutes ahead of the men, so they wouldn't be in danger of getting hurt in the rush. The girls in this plant also have separate time clocks for the same reason.

Only a few plants have adopted anti-fatigue musical programs. We discovered considerable difference of opinion as to the value in increasing war production. At one factory they were playing musical programs over their loud-speaker system three times a day, with request numbers sent in by workers. In time, they expected to adopt a systematically worked-out program, playing what experts say is the "right tune at exactly the right moment."

Impatient at government and community delays in furnishing day nurseries for children of working mothers, some war factories are beginning to provide their own day care facilities. At the Douglas Aircraft Company in Santa Monica, California, we received the first news of the big new day nurseries the plant is establishing to take care of about 500 children. Workers will be charged a nominal sum for leaving their young-



sters at the nursery. It will be located about three miles from the plant, for safety reasons. The Douglas Company is among those which have taken the day-care problem into their own hands after running into a number of cases of service men's wives who need work but have no place to leave the children.

Addition of women to factory forces has meant considerable construction of suitable washrooms. In general, these are designed to take care of a maximum number of employees in the shortest time at lunch periods and shift changes. Many plants have installed wash fountains, operated by a

foot pedal, that have space for as many as 20 girls at one time. One employer was so proud of his plant's hand lotion, furnished to ward off skin diseases, that he insisted we make a special trip to the washroom to try it!

Most plants do not pay women lower wages than men to cover the cost of restroom installations, a practice frowned on by Washington.

Having heard rumors of beauty parlors installed in war plants as concessions to women's vanity, we inquired for them at various plants.

"We're glamorizing cartridges, not women," said one manufacturer. "We use our red fingernail polish here," he said, picking up a cartridge with a red-painted tip identifying it as a tracer bullet.

In general, women obey safety rules better than men, plant officials reported. By nature, they approach a machine more cautiously and hence do not have as many serious accidents. There is only one safety rule that employers have had difficulty in enforcing among women. They do not like to have their hair tucked up under a bandana or cap, as required by most plants. Many women prefer running the risk of getting scalped by a whirring machine to hiding their "crowning glory." Around Hollywood, where girls are especially proud of their shoulder-length bobs, this rule has been difficult to enforce. Even a helmet designed by leading stylists has not helped much.

A number of plants have added women counselors or women doctors to their staffs to look after women employees. One of these, Dr. Margaret Nelson, 30-year old physician in charge of health at Chrysler's De Soto bomber plant in Detroit, reported that the average woman working in a factory is better off physically and mentally than the average housewife. Trying to do a double job of keeping house and working eight hours in a factory doesn't leave much time for worry about one's self, she explained.

What effect will working in a factory have on a woman's housekeeping if she decides to go back to the home when the war is over?

Plant officials predict that women who decide to return home to take up household duties after the war will take with them new habits of tidiness and a new outlook. They will not be dependent on their husbands and fathers to do repairs and will be able to put many of their own ideas into practice without waiting for a handyman. Women who would otherwise be too individualistic will have learned to work in a team. Others, inclined to depreciate their own small efforts, will understand how production depends on the sum total of work done by many different people.

Much of this new strength of character will be born of the good housekeeping methods that the woman worker is learning from and is teaching the American manufacturer today.

Some Women Newspaper Correspondents Who Participated



Bess Stephenson



Marcia Winn



Nell Giles



Janet Owen

Carolyn Anspacher

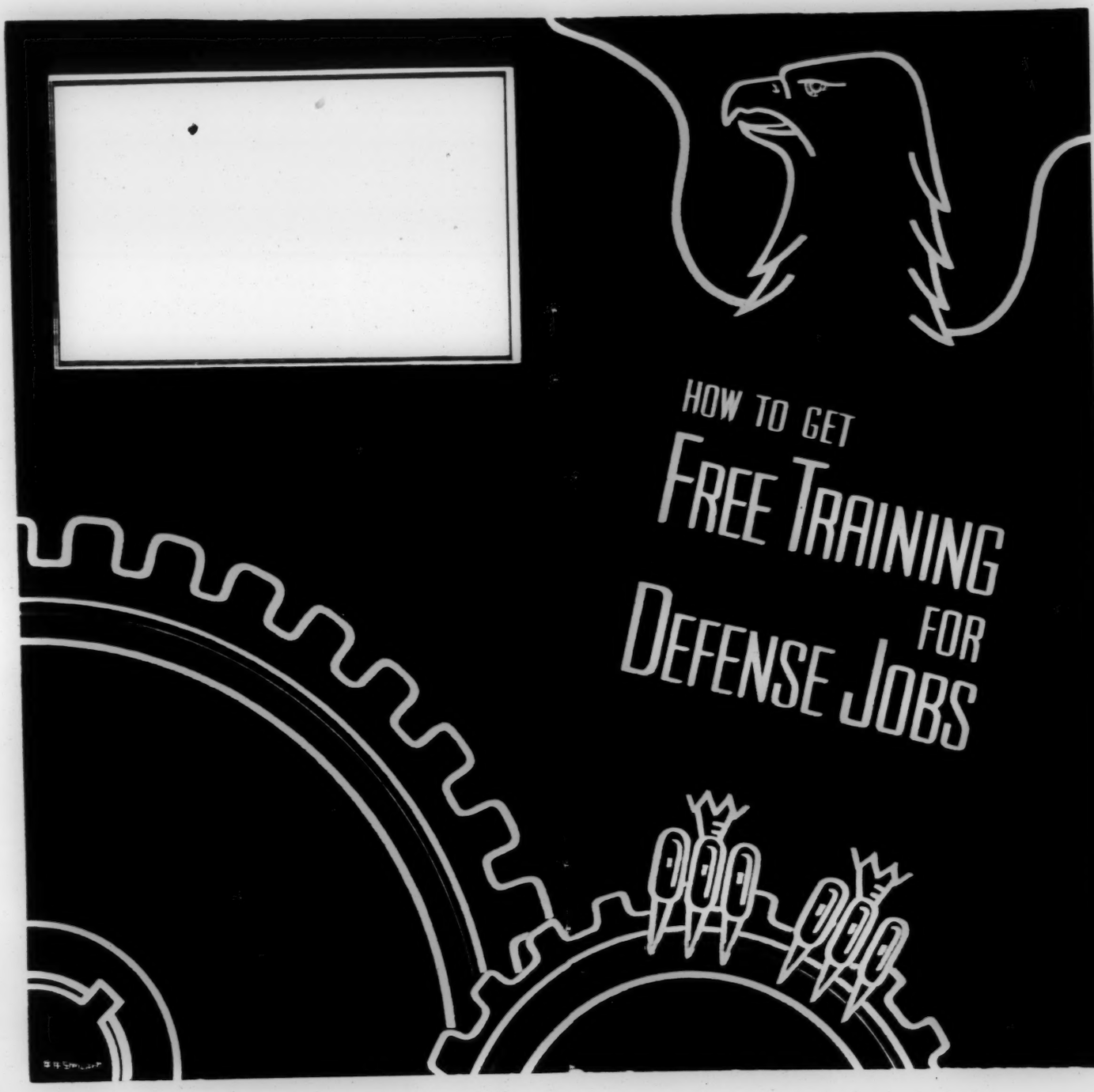




Amy Porter



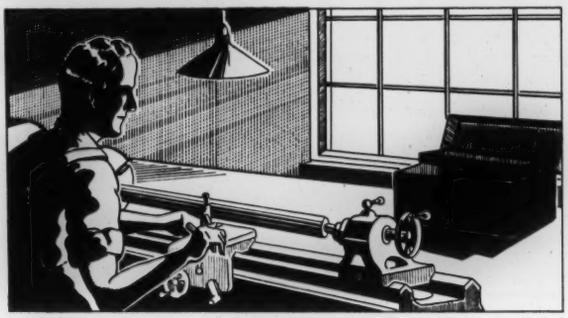
Mary Hornaday


HOW TO GET
FREE TRAINING
FOR
DEFENSE JOBS



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Federal Security Agency
In Cooperation With
Office of Production Management

I. S. C. 49 September 1941



THE DEFENSE industries are looking for skilled workers.

Aircraft manufacturers want aeronautical engineers, tool makers, machinists, machine operators, assemblers, welders, riveters, sheet metal workers, woodworkers, and inspectors.

Shipbuilders want marine machinists, ship fitters, marine engineers, naval architectural draftsmen, tool makers, coppersmiths, loftsmen, boatbuilders, caulkers, ship electricians, and ship carpenters.

Machine shops and machinery manufacturers want machinists, tool makers, lathe operators, diemakers, and tool designers.

Other defense industries want workers of other trades and occupations, workers of all grades of mechanical skill.

The local office of your State Employment Service will refer you, if you are qualified, to employers who have such jobs to fill. But for skilled jobs you must have training and experience.

HOW TO GET FREE TRAINING FOR DEFENSE JOBS



Government, industry, and labor have set up a Nation-wide training program to prepare workers for defense jobs. Some of this training is given in public schools, some in engineering colleges, and some in industrial plants. All of it is free. You may be able to get this training—

If you are unemployed and used to do mechanical work but are rusty and need to brush up;

If you are unemployed and have little or no training or experience;

If you are employed and want more training to improve your skill;

If you are employed and want retraining to transfer to a defense job;

If you are about to become unemployed because of shortage of materials needed for defense or because your factory is about to retool for defense;

If you have had some engineering training or practical experience but want more.

Here are some of the kinds of work for which you can get these free training courses:

Welding	Foundry work
Riveting	Forging
Sheet metal work	Electrical work
Machine operations	Pipefitting
Metal forming and shaping	Lay-out work
	Engineering

Work in all these lines is necessary in the manufacturing and servicing of aircraft, machine tools, machinery, engines, automobiles, electrical equipment, ships, chemicals, ammunition, and ordnance.

★

FOR THE TRAINING YOU WANT, go first to the nearest local office of your State Employment Service, register for a job, and ask about free training. The employment office will tell you what the next steps are.

There are local offices of State Employment Services in 1,500 different cities and towns all over the country. There are part-time offices in 3,000 other places. Use the office nearest you. If you do not know where it is, look in the telephone book, or ask at your post office.

If you are unemployed and used to do mechanical work but are rusty, the employment office will tell you where you can get a "refresher" course that will help you to get back your old skill.

If you are unemployed and have little or no training or experience, the employment office will tell you about the kinds of work you may be able to do—and may refer you to any one of the following kinds of training:

1. Preparatory or preemployment training in a vocational class in a nearby public school or shop, to fit you for a specific job.

2. Defense training in a rural vocational school or shop when specific preemployment training is not available, to fit you for general industrial or agricultural employment.

3. Work experience provided by the National Youth Administration, if you are a young man or woman between the ages of 17 (16 in some States) and 25 years and are out of school.

4. Work experience provided by the Civilian Conservation Corps, if you are a young man between the ages of 17 and 23½ years and are unmarried and out of work.

5. Apprenticeship training, if you want to learn a trade and become a skilled craftsman. Under the standards approved by the Federal Committee on Apprenticeship Training of the United States Department of Labor and by organized labor and employers, apprentices are paid while they are learning and go to classes about 4 hours a week for instruction related to the

trade. For apprenticeship training, generally you must be over 16 but not over 21 and a high school graduate, or else you must have an equivalent amount of education. Apprenticeship training for an all-round mechanic in the skilled trades takes from 2 to 5 years and prepares young men for important jobs in industry.

If you are employed and want more training to improve your skill, the employment office will tell you how you may get supplementary courses at vocational schools and in industrial plants.

If you are employed and want retraining to transfer to a defense job, the employment office will help you to change over to a defense job, if possible, or to get retraining if you need it to qualify for a defense job.

If you are about to become unemployed because of a shortage of materials needed for defense, or because your factory is about to retool for defense, the employment office will help you to get a new job or to get retraining if you need it to qualify for a defense job. The employment office will cooperate with your labor union in arranging for your job transfer and training. The employment office will also take your claim for unemployment insurance benefits while you are out of work.

If you have had some engineering training or practical experience and want more, you may be able to get a short course at a college. There are full-time courses which prepare you for special fields of engineering work, and part-time courses which give you "in-service" training if you are already employed in engineering work. The State employment office can tell you where to apply for training of this kind.

If you are employed by the Work Projects Administration, have a high school education and are between 18 and 30 years of age, you may be interested in Airport Ground Service training. This is carried on under the Civil Aeronautics Authority and the United States Office of Education, but only in some localities, at airports approved by the Civil Aeronautics Authority. The State employment office or the Work Projects Administration office can tell you about this.

The local employment office of your State Employment Service is the key to defense jobs and to free training for defense jobs. Consult the office nearest you.

PUBLIC AGENCIES ASSOCIATED WITH DEFENSE LABOR SUPPLY AND TRAINING

Office of Production Management

Training-Within-Industry, Labor Division
Labor Supply Branch, Labor Division
Defense Training Branch, Labor Division

Federal Security Agency

United States Employment Service,
Social Security Board
State Employment Services
Local Employment Offices

United States Office of Education
State Boards of Vocational Education
Local Boards of Education

Degree-granting Colleges and Universities, operating under charters exempting from taxation

National Youth Administration

Civilian Conservation Corps

United States Department of Labor

Federal Committee on Apprenticeship,
Division of Labor Standards

United States Civil Service Commission

Federal Works Agency

Work Projects Administration



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The Joint Committee for the Selection of Non-Federal Educational Institutions, which was appointed to select the colleges and universities to be utilized in the specialized war training programs of the Armed Forces, has completed a fourth list of approved institutions, the War Manpower Commission announced today. The committee is made up of nine members, three from the War Department, three from the Navy Department and three from the War Manpower Commission.

The fourth list included the names of 469 educational institutions. Of this number, fifty-two represented net additions to the previously announced lists of colleges and universities eligible for participation in the college war training programs of the Army and Navy. The other colleges and universities on today's list were placed there because they were approved this week for additional types of training programs over and above those for which they previously had been declared eligible by the Joint Committee.

In issuing its fourth list, the Joint Committee stated that an aggregate of 479 institutions have now been selected for the war training programs. Of these, slightly more than one-third are small colleges with normal enrollments of under 500 students.

"A total of 479 colleges and universities now appear on the rolls of Army and Navy training programs as eligibles for use in one or more kinds of programs." The Joint Committee said, "More will be added in the near future. Small as well as large institutions are to be used by the Army and Navy in the conduct of their programs. Based on their normal enrollments, the schools selected to date are distributed as follows:

Normal Enrollment	No. of schools
Under 500	161
500-1000	134
1,000-2000	85
over 2,000	99

"It should be clearly understood that approval of educational institutions for the war training programs means only that the indicated branch of the services is permitted to investigate the designed institutions with a view to negotiating contracts. Actual contracts will be let only to those institutions whose facilities, upon inspection, prove acceptable to the designated branch of the armed services and in the event that the proposed contracts are acceptable to the colleges or universities.

The Committee has surveyed the entire field of American colleges and Universities in an attempt to select those institutions which have the facilities to aid the Armed Forces in the development of officers, technicians and specialists needed in the conduct of the war. The Army and the Navy plans to utilize the colleges to obtain officers, doctors, dentists, engineers, meteoroligists and other specialists.

The list of institutions, approved this week, with astericks indicating those which had not been previously approved for any war training program, follows:

For inspection and possible contract by the War Department for Basic Training under the Army Specialized Training Program:

Alaska:	UNIVERSITY OF ALASKA, College
Alabama:	ALABAMA POLYTECHNIC INSTITUTE, Auburn
	UNIVERSITY OF ALABAMA, University
Arizona:	UNIVERSITY OF ARIZONA, Tucson
Arkansas:	UNIVERSITY OF ARKANSAS, Fayetteville
California:	FRESNO STATE TEACHERS COLLEGE, Fresno
	UNIVERSITY OF SANTA CLARA, Santa Clara
	WHITTIER COLLEGE, Whittier
Colorado:	COLORADO STATE COLLEGE OF A & M, Fort Collins
	COLORADO SCHOOL OF MINES, Golden
Connecticut:	UNIVERSITY OF CONNECTICUT, Storrs
Delaware:	UNIVERSITY OF DELAWARE, Newark
Dist. of Col:	CATHOLIC UNIVERSITY OF AMERICA, Washington
	GEORGE WASHINGTON UNIVERSITY, Washington
Florida:	UNIVERSITY OF FLORIDA, Gainesville
Georgia:	GEORGIA SCHOOL OF TECHNOLOGY, Atlanta
	NORTH GEORGIA COLLEGE, Dahlonega
Idaho:	UNIVERSITY OF IDAHO, Moscow
Illinois:	BRADLEY POLYTECHNIC INSTITUTE, Peoria
	ILLINOIS COLLEGE, Jacksonville
	DE PAUL UNIVERSITY, Chicago
	LAKE FOREST COLLEGE, Lake Forest
	NORTH CENTRAL COLLEGE, Naperville
	WHEATON COLLEGE, Wheaton
Indiana:	BALL STATE TEACHERS COLLEGE, Muncie
	CULVER MILITARY ACADEMY, Culver
	FRANKLIN COLLEGE, Franklin
	ROSE POLYTECHNIC INSTITUTE, Terre Haute
Iowa:	IOWA STATE A & M COLLEGE, Ames
Kansas:	KANSAS STATE COLLEGE OF AGRICULTURE & APPLIED SCIENCE, Manhattan
	UNIVERSITY OF KANSAS, Lawrence
Kentucky:	UNIVERSITY OF KENTUCKY, Lexington
	WESTERN KENTUCKY STATE TEACHERS COLLEGE, Bowling Green
Louisiana:	LOUISIANA STATE UNIVERSITY, Baton Rouge
Maine:	UNIVERSITY OF MAINE, Orono
	COLBY COLLEGE, Waterville
Maryland:	UNIVERSITY OF MARYLAND, College Park
Massachusetts:	BOSTON COLLEGE, Chestnut Hill
	CLARK UNIVERSITY, Worcester
	MASSACHUSETTS STATE COLLEGE, Amherst

Massachusetts:	NORTHEASTERN UNIVERSITY, Boston
Michigan:	ALBION COLLEGE, Albion
	KALAMAZOO COLLEGE, Kalamazoo
	MICHIGAN COLLEGE OF MINING AND TECHNOLOGY, Houghton
	MICHIGAN STATE COLLEGE OF AGRICULTURE & APPLIED SCIENCE, East Lansing
	UNIVERSITY OF DETROIT, Detroit
Minnesota:	CARLTON COLLEGE, Northfield
	HAMLINE UNIVERSITY, St. Paul
Mississippi:	MISSISSIPPI STATE COLLEGE, State College
Missouri:	DRURY COLLEGE, Springfield
	MISSOURI SCHOOL OF MINES & METALLURGY, Rolla
	UNIVERSITY OF MISSOURI, Columbia
	WASHINGTON UNIVERSITY, St. Louis
Montana:	MONTANA STATE COLLEGE, Bozeman
	MONTANA STATE UNIVERSITY, Missoula
Nebraska:	UNIVERSITY OF NEBRASKA, Lincoln
Nevada:	UNIVERSITY OF NEVADA, Reno
New Hampshire:	UNIVERSITY OF NEW HAMPSHIRE, Durham
New Jersey:	NEWARK COLLEGE OF ENGINEERING, Newark
	RUTGERS UNIVERSITY, New Brunswick
New Mexico:	NEW MEXICO COLLEGE OF AGRICULTURE & MECHANIC ARTS, Las Cruces
	NEW MEXICO MILITARY INSTITUTE, Roswell
	NEW MEXICO SCHOOL OF MINES, Socorro
New York:	ALFRED UNIVERSITY, Alfred
	BROOKLYN COLLEGE, Brooklyn
	CLARKSON COLLEGE OF TECHNOLOGY, Potsdam
	CITY COLLEGE OF NEW YORK, New York
	COOPER UNION, New York
	MANHATTAN COLLEGE, New York
	NEW YORK STATE TEACHERS COLLEGE, Albany
	NEW YORK UNIVERSITY, New York
	POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn
	PRATT INSTITUTE, Brooklyn
	QUEENS COLLEGE, Flushing, Long Island
	ST. JOHN'S UNIVERSITY, Brooklyn
	SYRACUSE UNIVERSITY, Syracuse
North Carolina:	STATE COLLEGE OF AGRICULTURE AND ENGINEERING OF THE UNIVERSITY OF NORTH CAROLINA, Raleigh
	NORTH CAROLINA COLLEGE FOR NEGROES, Durham
	WAKE FOREST COLLEGE, Wake Forest
North Dakota:	NORTH DAKOTA AGRICULTURAL COLLEGE, State College
	UNIVERSITY OF NORTH DAKOTA, University
Ohio:	ANTIOCH COLLEGE, Yellow Springs
	HEIDELBERG COLLEGE, Tiffin
	KENYON COLLEGE, Gambier
	MUSKINGUM COLLEGE, New Concord
	UNIVERSITY OF CINCINNATI, Cincinnati
Oklahoma:	OKLAHOMA AGRICULTURAL & MECHANICAL COLLEGE, Stillwater
	OKLAHOMA MILITARY ACADEMY, Claremore
	UNIVERSITY OF TULSA, Tulsa
Oregon:	OREGON STATE COLLEGE, Corvallis

Pennsylvania:	CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh
	DREXEL INSTITUTE OF TECHNOLOGY, Philadelphia
	LAFAYETTE COLLEGE, Easton
	LEHIGH UNIVERSITY, Bethlehem
	PENNSYLVANIA STATE COLLEGE, State College
	WESTMINSTER COLLEGE, New Wilmington
Rhode Island:	PROVIDENCE COLLEGE, Providence
	RHODE ISLAND STATE COLLEGE, Kingston
South Carolina:	CLEMSON AGRICULTURAL COLLEGE, Clemson
	COLLEGE OF CHARLESTON, Charleston
	FURMAN UNIVERSITY, Greenville
	THE CITADEL, Charleston
South Dakota:	SOUTH DAKOTA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Brookings
Tennessee:	FISK UNIVERSITY, Nashville
	SOUTHWESTERN, Memphis
	UNIVERSITY OF TENNESSEE, Knoxville
Texas:	AGRICULTURAL & MECHANICAL COLLEGE OF TEXAS, College Station
	COLLEGE OF MINES AND METALLURGY, El Paso
	NORTH TEXAS TEACHERS COLLEGE, Denton
	TEXAS TECHNOLOGICAL COLLEGE, Lubbock
Utah:	UNIVERSITY OF UTAH, Salt Lake City
	UTAH STATE AGRICULTURAL COLLEGE, Logan
Vermont:	NORWICH UNIVERSITY, Northfield
	UNIVERSITY OF VERMONT, Burlington
Virginia:	RANDOLPH-MACON COLLEGE, Ashland
	VIRGINIA MILITARY INSTITUTE, Lexington
	VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg
	WASHINGTON & LEE UNIVERSITY, Lexington
Washington:	COLLEGE OF PUGET SOUND, Tacoma:
	STATE COLLEGE OF WASHINGTON, Pullman
West Virginia:	WEST VIRGINIA UNIVERSITY, Morgantown
Wyoming:	UNIVERSITY OF WYOMING, Laramie

For inspection and possible contract by the War Department for Pre-Medical Training:

Alabama:	UNIVERSITY OF ALABAMA, University
Arkansas:	UNIVERSITY OF ARKANSAS, Fayetteville
California:	UNIVERSITY OF CALIFORNIA AT LOS ANGELES, Los Angeles
Dist. of Col:	CATHOLIC UNIVERSITY, Washington
	GEORGE WASHINGTON UNIVERSITY, Washington
	HOWARD UNIVERSITY, Washington
Florida:	UNIVERSITY OF FLORIDA, Gainesville
Georgia:	UNIVERSITY OF GEORGIA, Athens
Idaho:	UNIVERSITY OF IDAHO, Moscow
Illinois:	LOYOLA UNIVERSITY, Chicago
Iowa:	IOWA STATE COLLEGE OF AGRICULTURE & MECHANIC ARTS, Ames
Kansas:	KANSAS STATE COLLEGE OF A. & A. S., Manhattan
	UNIVERSITY OF KANSAS, Lawrence
Louisiana:	LOUISIANA STATE UNIVERSITY, Baton Rouge
Maine:	UNIVERSITY OF MAINE, Orono
Maryland:	UNIVERSITY OF MARYLAND, College Park
Michigan:	MICHIGAN STATE COLLEGE OF A. & A. S., East Lansing

	UNIVERSITY OF DETROIT, Detroit
Mississippi:	UNIVERSITY OF MISSISSIPPI, University
Missouri:	UNIVERSITY OF MISSOURI, Columbia
	WASHINGTON UNIVERSITY, St. Louis
Nebraska:	UNIVERSITY OF NEBRASKA, Lincoln
New Hampshire:	UNIVERSITY OF NEW HAMPSHIRE, Durham
New Jersey:	RUTGERS UNIVERSITY, New Brunswick
New York:	COLLEGE OF THE CITY OF NEW YORK, New York
	NEW YORK UNIVERSITY, New York
	SYRACUSE UNIVERSITY, Syracuse
North Carolina:	WAKE FOREST COLLEGE, Wake Forest
North Dakota:	UNIVERSITY OF NORTH DAKOTA, Grand Forks
Ohio:	UNIVERSITY OF CINCINNATI, Cincinnati
Oklahoma:	UNIVERSITY OF OKLAHOMA, Norman
Pennsylvania:	LAFAYETTE COLLEGE, Easton
	PENNSYLVANIA STATE COLLEGE, State College
	ST. JOSEPH'S COLLEGE, Philadelphia
	TEMPLE UNIVERSITY, Philadelphia
Tennessee:	FISK UNIVERSITY, Nashville
	UNIVERSITY OF TENNESSEE, Knoxville
Texas:	AGRICULTURAL & MECHANICAL COLLEGE OF TEXAS, College Station
	TEXAS TECHNOLOGICAL COLLEGE, Lubbock
Utah:	UNIVERSITY OF UTAH, Salt Lake City
Vermont:	UNIVERSITY OF VERMONT, Burlington
Virginia:	WASHINGTON & LEE UNIVERSITY, Lexington
Washington:	STATE COLLEGE OF WASHINGTON, Pullman
West Virginia:	WEST VIRGINIA UNIVERSITY, Morgantown

For inspection and possible contract by the War Department for Medical Training:

Arkansas:	UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, Little Rock
California:	COLLEGE OF MEDICAL EVANGELISTS, Loma Linda, Los Angeles
	STANFORD UNIVERSITY SCHOOL OF MEDICINE, San Francisco
	UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE, San Francisco
	UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, Los Angeles
Colorado:	UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, Denver
Connecticut:	YALE UNIVERSITY SCHOOL OF MEDICINE, New Haven
Dist. of Col:	GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, Washington
	GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Washington
	HOWARD UNIVERSITY, Washington
Georgia:	EMORY UNIVERSITY SCHOOL OF MEDICINE, Atlanta
	UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE, Augusta
Illinois:	LOYOLA UNIVERSITY SCHOOL OF MEDICINE, Chicago
	NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, Chicago
	UNIVERSITY OF CHICAGO, THE SCHOOL OF MEDICINE, Chicago
	UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, Chicago
Indiana:	INDIANA UNIVERSITY SCHOOL OF MEDICINE, Bloomington
Iowa:	STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City
Kansas:	UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence
Kentucky:	UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, Louisville
Louisiana:	LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, New Orleans
	TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, New Orleans

Maryland:	JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, Baltimore
	UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Baltimore
Massachusetts:	BOSTON UNIVERSITY SCHOOL OF MEDICINE, Boston
	HARVARD MEDICAL SCHOOL, Boston
	TUFTS COLLEGE MEDICAL SCHOOL, Boston
Michigan:	UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor
	WAYNE UNIVERSITY COLLEGE OF MEDICINE, Detroit
Minnesota:	UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, MINNEAPOLIS
Missouri:	ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, St. Louis
	WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, St. Louis
Nebraska:	CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, Omaha
	UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Omaha
New York:	ALBANY MEDICAL COLLEGE, Albany
	COLUMBIA UNIVERSITY, New York
	CORNELL UNIVERSITY MEDICAL COLLEGE, New York
	LONG ISLAND COLLEGE OF MEDICINE, Brooklyn
	NEW YORK MEDICAL COLLEGE, New York
	NEW YORK UNIVERSITY COLLEGE OF MEDICINE, New York
	SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, Syracuse
	UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, Buffalo
	UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE, Rochester
North Carolina:	BOWMAN GRAY SCHOOL OF MEDICINE, Wake Forest
	DUKE UNIVERSITY SCHOOL OF MEDICINE, Durham
Ohio:	OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Columbus
	UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Cincinnati
	WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, Cleveland
Oklahoma:	UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, Oklahoma City
Oregon:	UNIVERSITY OF OREGON SCHOOL OF MEDICINE, Portland
Pennsylvania:	HAHNEMANN MEDICAL COLLEGE & HOSPITAL OF PHILADELPHIA, Phila.
	UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Philadelphia
	JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, Philadelphia
	TEMPLE UNIVERSITY SCHOOL OF MEDICINE, Philadelphia
	UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Pittsburgh
South Carolina:	MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, Charleston
Tennessee:	MEHARRY MEDICAL COLLEGE, Nashville
	UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, Memphis
	VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Nashville
Texas:	BAYLOR UNIVERSITY COLLEGE OF MEDICINE, Dallas
	UNIVERSITY OF TEXAS MEDICAL BRANCH, Galveston
Vermont:	UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Burlington
Virginia:	MEDICAL COLLEGE OF VIRGINIA, Richmond
	UNIVERSITY OF [redacted] SCHOOL OF MEDICINE, Charlottesville
Wisconsin:	MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, Milwaukee
	UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, Madison

For instruction and possible interest by the War Department for training in the Basic Medical Sciences (two years):

Alabama:	UNIVERSITY OF ALABAMA, University
Mississippi:	UNIVERSITY OF MISSISSIPPI, University
Missouri:	UNIVERSITY OF MISSOURI, Columbia
New Hampshire:	DARTMOUTH MEDICAL SCHOOL, Hanover
North Carolina:	UNIVERSITY OF NORTH CAROLINA, Chapel Hill
North Dakota:	UNIVERSITY OF NORTH DAKOTA, Grand Forks

South Dakota: UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICAL SCIENCES, Vermillion
Utah: UNIVERSITY OF UTAH SCHOOL OF MEDICINE, Salt Lake City
West Virginia: WEST VIRGINIA UNIVERSITY, Morgantown

For inspection and possible contract by the War Department for Dental Training:

California: COLLEGE OF PHYSICIANS AND SURGEONS, SCHOOL OF DENTISTRY, San Francisco
UNIVERSITY OF CALIFORNIA, COLLEGE OF DENTISTRY, San Francisco
UNIVERSITY OF SOUTHERN CALIFORNIA, COLLEGE OF DENTISTRY, Los Angeles
Dist. of Col: GEORGETOWN UNIVERSITY, SCHOOL OF DENTISTRY, Washington
HOWARD UNIVERSITY, COLLEGE OF DENTISTRY, Washington
Georgia: ATLANTA-SOUTHERN DENTAL COLLEGE, Atlanta
Illinois: LOYOLA UNIVERSITY, CHICAGO COLLEGE OF DENTAL SURGERY, Chicago
UNIVERSITY OF ILLINOIS, COLLEGE OF DENTISTRY, Chicago
NORTHWESTERN UNIVERSITY, DENTAL SCHOOL, Chicago
Indiana: INDIANA UNIVERSITY, SCHOOL OF DENTISTRY, Indianapolis
Iowa: STATE UNIVERSITY OF IOWA, COLLEGE OF DENTISTRY, Iowa City
Kentucky: UNIVERSITY OF LOUISVILLE, SCHOOL OF DENTISTRY, Louisville
Louisiana: LOYOLA UNIVERSITY OF THE SOUTH, SCHOOL OF DENTISTRY, New Orleans
Maryland: UNIVERSITY OF MARYLAND, BALTIMORE COLLEGE OF DENTAL SURGERY, Baltimore
Massachusetts: TUFTS COLLEGE DENTAL SCHOOL, Boston
Michigan: UNIVERSITY OF DETROIT, SCHOOL OF DENTISTRY, Detroit
UNIVERSITY OF MICHIGAN, SCHOOL OF DENTISTRY, Ann Arbor
Minnesota: UNIVERSITY OF MINNESOTA, SCHOOL OF DENTISTRY, Minneapolis
Missouri: ST. LOUIS UNIVERSITY, SCHOOL OF DENTISTRY, St. Louis
WASHINGTON UNIVERSITY, SCHOOL OF DENTISTRY, St. Louis
UNIVERSITY OF KANSAS CITY, Kansas City
Nebraska: CREIGHTON UNIVERSITY, SCHOOL OF DENTISTRY, Omaha
UNIVERSITY OF NEBRASKA, COLLEGE OF DENTISTRY, Lincoln
New York: COLUMBIA UNIVERSITY, SCHOOL OF DENTAL AND ORAL SURGERY, New York
NEW YORK UNIVERSITY, COLLEGE OF DENTISTRY, New York
UNIVERSITY OF BUFFALO, SCHOOL OF DENTISTRY, Buffalo
Ohio: OHIO STATE UNIVERSITY, COLLEGE OF DENTISTRY, Columbus
WESTERN RESERVE UNIVERSITY, SCHOOL OF DENTISTRY, Cleveland
Oregon: NORTH PACIFIC COLLEGE OF OREGON, SCHOOL OF DENTISTRY, Portland
Pennsylvania: TEMPLE UNIVERSITY, SCHOOL OF DENTISTRY, Philadelphia
UNIVERSITY OF PENNSYLVANIA, SCHOOL OF DENTISTRY, Philadelphia
UNIVERSITY OF PITTSBURGH, SCHOOL OF DENTISTRY, Pittsburgh
Tennessee: MEHARRY MEDICAL COLLEGE, DEPARTMENT OF DENTISTRY, Nashville
UNIVERSITY OF TENNESSEE, COLLEGE OF DENTISTRY, Memphis
Texas: BAYLOR UNIVERSITY, COLLEGE OF DENTISTRY, Dallas
TEXAS DENTAL COLLEGE, Houston
Virginia: MEDICAL COLLEGE OF VIRGINIA, SCHOOL OF DENTISTRY, Richmond
Wisconsin: MARQUETTE UNIVERSITY, DENTAL SCHOOL, Milwaukee

For inspection and possible contract by the War Department for Veterinary Training:

Alabama:	ALABAMA POLYTECHNIC INSTITUTE, Auburn
Colorado:	COLORADO STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Fort Collins
Iowa:	IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames
Kansas:	KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan
Michigan:	MICHIGAN STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, East Lansing
New York:	NEW YORK STATE VETERINARY COLLEGE, Cornell University, Ithaca
Ohio:	OHIO STATE UNIVERSITY, Columbus
Pennsylvania:	UNIVERSITY OF PENNSYLVANIA, Philadelphia
Texas:	AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS, College Station
Washington:	STATE COLLEGE OF WASHINGTON, Pullman

For inspection and possible contract by the War Department for training Chemical Warfare Service Instructors:

California:	CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena
Illinois:	UNIVERSITY OF CHICAGO, Chicago
Massachusetts:	MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge

For inspection and possible contract by the War Department for Area and Language Study under the Army Specialized Training Program:

Dist. of Col:	GEORGETOWN UNIVERSITY, Washington
Pennsylvania:	UNIVERSITY OF PENNSYLVANIA, Philadelphia

For inspection and possible contract by the Navy Department for Pre-Medical Training:

Alabama:	HOWARD COLLEGE, Birmingham
Arkansas:	ARKANSAS AGRICULTURAL AND MECHANICAL COLLEGE, Monticello
California:	COLLEGE OF THE PACIFIC, Stockton
	UNIVERSITY OF CALIFORNIA, Berkeley
	UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles
Colorado:	COLORADO COLLEGE, Colorado Springs
	UNIVERSITY OF COLORADO, Boulder
Connecticut:	TRINITY COLLEGE, Hartford
	WESLEYAN UNIVERSITY, Middletown
Georgia:	EMORY UNIVERSITY, Emory University
Illinois:	LOYOLA UNIVERSITY, Chicago
	NORTHWESTERN UNIVERSITY, Evanston
Indiana:	EVANSVILLE COLLEGE, Evansville
	UNIVERSITY OF NOTRE DAME, Notre Dame
Iowa:	DRAKE COLLEGE, Des Moines
Kansas:	WASHBURN MUNICIPAL UNIVERSITY OF TOPEKA, Topeka
Kentucky:	UNIVERSITY OF LOUISVILLE, Louisville

Louisiana:	SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette
	TULANE UNIVERSITY OF LOUISIANA, New Orleans
Maine:	BATES COLLEGE, Lewiston
Massachusetts:	COLLEGE OF THE HOLY CROSS, Worcester
	HARVARD UNIVERSITY, Cambridge
	TUFTS COLLEGE, Medford
	WILLIAMS COLLEGE, Williamstown
Michigan:	ALMA COLLEGE, Alma
	UNIVERSITY OF MICHIGAN, Ann Arbor
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
Missouri:	WESTMINSTER COLLEGE, Fulton
New Hampshire:	DARTMOUTH COLLEGE, Hanover
New Mexico:	UNIVERSITY OF NEW MEXICO, Albuquerque
New York:	COLGATE UNIVERSITY, Hamilton
	COLUMBIA UNIVERSITY, New York
	CORNELL UNIVERSITY, Ithaca
	HOBART COLLEGE, Geneva
	ST LAWRENCE UNIVERSITY, Canton
	UNION COLLEGE, Schenectady
	UNIVERSITY OF ROCHESTER, Rochester
North Carolina:	DUKE UNIVERSITY, Durham
	LENOIR-RHYNE COLLEGE, Hickory
	UNIVERSITY OF NORTH CAROLINA, Chapel Hill
Ohio:	DENISON UNIVERSITY, Granville
	COLLEGE OF WOOSTER, Wooster
	OBERLIN COLLEGE, Oberlin
Oklahoma:	UNIVERSITY OF OKLAHOMA, Norman
Oregon:	WILLAMETTE UNIVERSITY, Salem
Pennsylvania:	FRANKLIN AND MARSHALL COLLEGE, Lancaster
	MUHLENBERG COLLEGE, Allentown
	SWARTHMORE COLLEGE, Swarthmore
	UBSINUS COLLEGE, Collegeville
	VILLANOVA COLLEGE, Villanova
Rhode Island:	BROWN UNIVERSITY, Providence
South Carolina:	UNIVERSITY OF SOUTH CAROLINA, Columbia
Tennessee:	CARSON-NEWMAN COLLEGE, Jefferson City
Texas:	RICE INSTITUTE, Houston
	SOUTHERN METHODIST UNIVERSITY, Dallas
	TEXAS CHRISTIAN UNIVERSITY, Fort Worth
	UNIVERSITY OF TEXAS, Austin
Vermont:	MIDDLEBURY COLLEGE, Middlebury
Virginia:	EMORY AND HENRY COLLEGE, Emory
	HAMPDEN-SYDNEY COLLEGE, Hampden-Sydney
	UNIVERSITY OF RICHMOND, Richmond
	UNIVERSITY OF VIRGINIA, Charlottesville
Washington:	GONZAGA UNIVERSITY, Spokane
	UNIVERSITY OF WASHINGTON, Seattle
	WHITMAN COLLEGE, Walla Walla
West Virginia:	BETHANY COLLEGE Bethany
Wisconsin:	MARQUETTE UNIVERSITY, Milwaukee

For inspection and possible contract by the Navy Department for Medical Training:

Arkansas:	UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, Little Rock

California:	COLLEGE OF MEDICAL EVANGELISTS, Loma Linda - Los Angeles
	STANFORD UNIVERSITY SCHOOL OF MEDICINE, San Francisco
	UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE, San Francisco
	UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, Los Angeles
Colorado:	UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, Denver
Connecticut:	YALE UNIVERSITY SCHOOL OF MEDICINE, New Haven
Dist. of Col:	GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, Washington
	GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Washington
Georgia:	EMORY UNIVERSITY SCHOOL OF MEDICINE, Atlanta
Illinois:	LOYOLA UNIVERSITY SCHOOL OF MEDICINE, Chicago
	NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, Chicago
	UNIVERSITY OF CHICAGO, THE SCHOOL OF MEDICINE, Chicago
	UNIVERSITY OF ILLINOIS, COLLEGE OF MEDICINE, Chicago
Indiana:	INDIANA UNIVERSITY SCHOOL OF MEDICINE, Bloomington
Iowa:	STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City
Kansas:	UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence
Kentucky:	UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, Louisville
Louisiana:	LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, New Orleans
	TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, New Orleans
Maryland:	JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, Baltimore
	UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Baltimore
Massachusetts:	BOSTON UNIVERSITY SCHOOL OF MEDICINE, Boston
	HARVARD MEDICAL SCHOOL, Boston
	TUFTS COLLEGE MEDICAL SCHOOL, Boston
Michigan:	UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor
	WAYNE UNIVERSITY COLLEGE OF MEDICINE, Detroit
Minnesota:	UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, Minneapolis
Missouri:	ST LOUIS UNIVERSITY SCHOOL OF MEDICINE, St. Louis
	WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, St. Louis
Nebraska:	CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, Omaha
	UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Omaha
New York:	ALBANY MEDICAL COLLEGE, Albany
	COLUMBIA UNIVERSITY, COLLEGE OF PHYSICIANS & SURGEONS, N. Y.
	CORNELL UNIVERSITY MEDICAL COLLEGE, New York
	LONG ISLAND COLLEGE OF MEDICINE, Brooklyn
	NEW YORK MEDICAL COLLEGE, New York
	NEW YORK UNIVERSITY COLLEGE OF MEDICINE, New York
	SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, Syracuse
	UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, Buffalo
	UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE, Rochester
North Carolina:	DUKE UNIVERSITY SCHOOL OF MEDICINE, Durham
	BOWMAN GRAY SCHOOL OF MEDICINE, OF WAKE FOREST COLLEGE, Winston-Salem
Ohio:	OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Columbus
	UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Cincinnati
	WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, Cleveland
Oklahoma:	UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, Oklahoma City
Oregon:	UNIVERSITY OF OREGON SCHOOL OF MEDICINE, Portland
Pennsylvania:	JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, Philadelphia
	TEMPLE UNIVERSITY SCHOOL OF MEDICINE, Philadelphia

	UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Philadelphia
	UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Pittsburgh
South Carolina:	MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, Charleston
Tennessee:	UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, Memphis
	VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Nashville
Texas:	BAYLOR UNIVERSITY COLLEGE OF MEDICINE, Dallas
	UNIVERSITY OF TEXAS MEDICAL BRANCH, Galveston
Vermont:	UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Burlington
Virginia:	MEDICAL COLLEGE OF VIRGINIA, Richmond
	UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE, Charlottesville
Wisconsin:	MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, Milwaukee
	UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, Madison

For inspection and possible contract by the Navy Department for training in the Basic Medical Sciences (two years):

Alabama:	UNIVERSITY OF ALABAMA, University
Mississippi:	UNIVERSITY OF MISSISSIPPI, University
Missouri:	UNIVERSITY OF MISSOURI, Columbia
New Hampshire:	DARTMOUTH MEDICAL SCHOOL, Hanover
North Carolina:	UNIVERSITY OF NORTH CAROLINA, Chapel Hill
North Dakota:	UNIVERSITY OF NORTH DAKOTA, Grand Forks
South Dakota:	UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICAL SCIENCES, Vermillion
Utah:	UNIVERSITY OF UTAH SCHOOL OF MEDICINES, Salt Lake City
West Virginia:	UNIVERSITY OF WEST-VIRGINIA, Morgantown

For inspection and possible contract by the Navy Department for Dental Training:

California:	COLLEGE OF PHYSICIANS AND SURGEONS, SCHOOL OF DENTISTRY, San Francisco
	UNIVERSITY OF CALIFORNIA, COLLEGE OF DENTISTRY, San Francisco
	UNIVERSITY OF SOUTHERN CALIFORNIA, COLLEGE OF DENTISTRY, Los Angeles
Dist. of Col:	GEORGETOWN UNIVERSITY, SCHOOL OF DENTISTRY, Washington
Georgia:	ATLANTA-SOUTHERN DENTAL COLLEGE, Atlanta
Illinois:	LOYOLA UNIVERSITY, CHICAGO COLLEGE OF DENTAL SURGERY, Chicago
	NORTHWESTERN UNIVERSITY, DENTAL SCHOOL, Chicago
	UNIVERSITY OF ILLINOIS, COLLEGE OF DENTISTRY, Chicago
Indiana:	INDIANA UNIVERSITY, SCHOOL OF DENTISTRY, Indianapolis
Iowa:	STATE UNIVERSITY OF IOWA, COLLEGE OF DENTISTRY, Iowa City
Kentucky:	UNIVERSITY OF LOUISVILLE, SCHOOL OF DENTISTRY, Louisville
Louisiana:	LOYOLA UNIVERSITY OF THE SOUTH, SCHOOL OF DENTISTRY, New Orleans
Maryland:	UNIVERSITY OF MARYLAND, BALTIMORE.COLLEGE OF DENTAL SURGERY, Baltimore
Massachusetts:	HARVARD UNIVERSITY, DENTAL SCHOOL, Boston
	TUFTS COLLEGE, DENTAL SCHOOL; Boston
Michigan:	UNIVERSITY OF DETROIT, SCHOOL OF DENTISTRY, Detroit

Minnesota:	UNIVERSITY OF MICHIGAN, SCHOOL OF DENTISTRY, Ann Arbor
Minnesota:	UNIVERSITY OF MINNESOTA, SCHOOL OF DENTISTRY, Minneapolis
Missouri:	ST. LOUIS UNIVERSITY, SCHOOL OF DENTISTRY, St. Louis
	UNIVERSITY OF KANSAS CITY, Kansas City
	WASHINGTON UNIVERSITY, SCHOOL OF DENTISTRY, St. Louis
Nebraska:	CREIGHTON UNIVERSITY, SCHOOL OF DENTISTRY, Omaha
	UNIVERSITY OF NEBRASKA, COLLEGE OF DENTISTRY, Lincoln
New York:	COLUMBIA UNIVERSITY, SCHOOL OF DENTAL AND ORAL SURGERY, New York
	NEW YORK UNIVERSITY, COLLEGE OF DENTISTRY, New York
	UNIVERSITY OF BUFFALO, SCHOOL OF DENTISTRY, Buffalo
Ohio:	OHIO STATE UNIVERSITY, SCHOOL OF DENTISTRY, Columbus
	WESTERN RESERVE UNIVERSITY, SCHOOL OF DENTISTRY, Cleveland
Oregon	NORTH PACIFIC COLLEGE OF OREGON, SCHOOL OF DENTISTRY, Portland
Pennsylvania:	TEMPLE UNIVERSITY, SCHOOL OF DENTISTRY, Philadelphia
	UNIVERSITY OF PENNSYLVANIA, SCHOOL OF DENTISTRY, Philadelphia
	UNIVERSITY OF PITTSBURGH, SCHOOL OF DENTISTRY, Pittsburgh
Tennessee:	UNIVERSITY OF TENNESSEE, COLLEGE OF DENTISTRY, Memphis
Texas:	BAYLOR UNIVERSITY, COLLEGE OF DENTISTRY, Dallas
	TEXAS DENTAL COLLEGE, Houston
Virginia:	MEDICAL COLLEGE OF VIRGINIA, SCHOOL OF DENTISTRY, Richmond
Wisconsin:	MARQUETTE UNIVERSITY, DENTAL SCHOOL,, Milwaukee

WAR MANPOWER COMMISSION
Apprentice and Training Service

APPRENTICE AND TRAINING SERVICE OF WAR MANPOWER COMMISSION PROMOTES TRAINING OF WAR PRODUCTION WORKERS ON THE JOB

The Apprentice and Training Service is one of the operating agencies of the War Manpower Commission.

Until it was transferred to the War Manpower Commission by Executive Order in April, 1942, the Apprentice and Training Service was part of the U. S. Department of Labor, established by an Act of Congress several years ago to promote the training of apprentices according to standards of training recommended by the Federal Committee on Apprenticeship.

Though primarily established to promote apprenticeship, for the duration of the war, the Service is assisting in handling other phases of labor training vital to the war effort.

To understand clearly the functions of training agencies operating under the supervision and direction of the War Manpower Commission, it must first be realized that the training of all workers falls into two major categories:

1. Training "on-the-job" of employed workers who contribute to production while they are increasing their skills.

2. Training "off the job" in class rooms and vocational education shops.

Currently, the particular functions of the Apprentice and Training Service is to render assistance to war plants in:

1. Establishing or improving arrangements for training apprentices in plants and shops where apprentice-trained craftsmen are indispensable.

2. Helping war establishments setup short term training programs geared directly into their production machinery which may involve setting up a system of upgrading within a worker's own production level, or advancement to the next more difficult job, and for the re-training of workers within their own type of plant or industry to perform

3. [illegible]

4. In addition, the Service assists in obtaining interpretation of Federal and State labor laws, in rewriting training clauses of bargaining agreements, and performs other similar services.

These services are provided without cost to industries and other groups.

The field staff of the Apprentice and Training Service consists of more than 160 field men experienced in training apprentices and other workers under production conditions. These men operate out of some 70 field offices, grouped into twelve regions, located at key points throughout the 48 states.

The activities and functions of the Service are coordinated with those of other War Manpower Commission agencies.

Statistics reveal that there are at present nearly 2,000 approved apprentice training programs in effect, an increase of almost 400 during the past twelve months. Some 1,100 of these programs are designed to fill the specific needs of single plants. The remainder cover the training of apprentices in one craft over a geographic area such as a city or county.

The task of stimulating sound apprenticeship or similar forms of training is greatly facilitated by standards of apprenticeship and advancing workers' training recommended by the Federal Committee on Apprenticeship, a management-labor committee which has been advising the Federal Government on apprenticeship and in-plant training matters for a number of years.

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Serial No. C-46

16

DEFINITION OF "APPRENTICE" AND MINIMUM STANDARDS OF APPRENTICESHIP

1. Definition of "Apprentice":

The term "apprentice shall mean a person at least 16 years of age who is covered by a written agreement registered with a State Apprenticeship Council, providing for not less than 4,000 hours of reasonably continuous employment for such person, and for his participation in an approved schedule of work experience through employment, which should be supplemented by 144 hours per year of related classroom instruction.

2. Basic Standards:

1. An apprenticeable occupation is considered one which requires 4,000 or more hours to learn.

2. A schedule of the work processes to be learned on the job.

3. A progressively increasing scale of wages for the apprentice that should provide approximately 50 percent of the journeyman's rate over the period of apprenticeship.

4. Provision for related classroom instruction. 144 hours per year of such instruction is usually considered adequate.

5. The terms and conditions of the employment and training of such apprentices to be stated in a written agreement and registered with the State Apprenticeship Council.

6. Supervision of local apprenticeship by a State Apprenticeship Council.

7. Apprenticeship should be jointly established by the employer and the employee.

8. Adequate supervision and the keeping of records should be required for all Apprenticeship Programs.

Approved by the Federal Committee on Apprenticeship, June 17, 1941
Revised August 29, 1941

ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING COURSES
THE GEORGE WASHINGTON UNIVERSITY
School of Engineering

ENGINEERING FUNDAMENTALS (JR. ENGINEER-SUPPLEMENTAL) PART II

A short intensive course established primarily for
the United States Civil Service Commission

Purpose of Course

To provide training by means of which women particularly may qualify for Junior Engineer (Supplemental) positions in federal civilian service. Those who have the qualifications required for admission to the course and who successfully complete the course will be eligible for appointment to positions in the Bureau of Ordnance, Bureau of Ships, or Hydrographic Office of the Navy Department; U.S. Engineers Office or the Office of the Chief of Ordnance of the War Department; U. S. Maritime Commission, U. S. Geological Survey; National Advisory Committee for Aeronautics; Civil Aeronautics Administration; U. S. Coast and Geodetic Survey, or other Federal agencies. Appointments will be made to positions in field offices throughout the country as well as in Washington, D. C. and will be for not longer than the duration of the emergency. The entrance salary for Junior Engineer (Supplemental) positions is $2,000 per annum.

Qualifications for Admission

Only those who are citizens of or owe allegiance to the United States and who have successfully completed a full four-year course leading to a bachelor's degree at a college or university of recognized standing will be eligible for enrollment in the course. Preference will be given to enrollees who have successfully completed Part I, although others with the necessary background may be admitted, subject to the approval of the lecturer. No University credit will be allowed, but a certificate of attendance and satisfactory completion will be issued. The Administration reserves the right to select the trainees and preference will be given those enrollees who have a background of physics, chemistry and mathematics through trigonometry, either taken in high school or college. The regulations as set forth in the current catalog (1943-44), in so far as they apply, shall govern the conduct of the classes.

Length of Course

A total of 180 hours of class and laboratory work, not including the time devoted to outside preparation will be given in the second fifteen week term in the evening, on a part-time basis.

Outlines of Instruction

ENGINEERING DRAWING (Theory & Practice)

1. Lettering, principles and practice, use of instruments
2. Orthographic projections, detailed working drawings
3. Sectioning conventions, dimensioning
4. Drawing to scale, finishes and tolerances
5. Assembly drawings, bill of materials
6. Tracing and blue printing, free hand technical sketching
7. Isometric projection, conic sections and irregular curves
8. Fasteners - bolts, nuts, rivets, screws and welds
9. Shop mathematics and systematic computations
10. Pipe fittings and pipe drawings
11. Estimating graphs and curve plotting
12. Applications of descriptive geometry
13. Special problems in mechanical, electrical, structural or ship drawing - by trainee selection
14. Continuation of problems as in 13
15. Continuation of problems as in 13

ELEMENTARY MECHANICS OF MATERIALS

	Classroom	Laboratory
1.	Organization and Introduction	Testing Machines and Instruments
2.	Forces Acting on Solid Bodies	Compression tests - Stone - Concrete
3.	Principles of Beams	Compression tests - Wood
4.	Principles of Beams	Compression tests - Wood beams (small)
5.	Application of Beam Principles	Compression tests - Wood beams (large)
6.	Written review to date	Compression tests - Wood columns
7.	Bodies under Compressive Stress	Brick in Bending - Compression
8.	Bodies in Torsion	Brick Absorption
9.	Elastic Deformations	Wrought iron, Cold Rolled Steel
10.	Written review to date	Hot Rolled Steel
11.	Miscellaneous Applications	Steel Beams
12.	Compound Bodies	Torsion - Steel
13.	Compound Bodies	Hollow Tile
14.	Combined Stresses	Sewer and Drain Tile
15.	Comprehensive Examination	Gypsum Block

The class will meet from January 3rd to April 14th, 1944. As a tentative schedule ELEMENTARY MECHANICS OF MATERIALS will be taught as a three-hour meeting on Monday evening with a one-hour lecture or a recitation covering the ground of the preceding lecture, followed by a two-hour supervised problem period. On Friday evening the class will open with a lecture and discussion meeting, followed by a two-hour testing laboratory demonstration with the students assisting in the tests and recording the data, a discussion of the specifications of the materials at hand and the reduction of the test data and

the outline of the written reports. The texts for this work will be Merriman's "Strength of Materials", Eighth Edition revised by Edward H. Hankin; Johnson's "Materials of Construction" by M. O. Withey; and the American Society for Testing Materials student laboratory handbook.

The ENGINEERING DRAWING class will meet on Tuesday and Thursday evenings. Each student will have to supply himself with a text, French's "Engineering Drawing", a small board, drafting instruments, triangles, T square, irregular curve, scales, paper and pencils, as directed by the lecturer.

No class will be scheduled for Wednesday evening or on Saturday. This free time is for home study to care for the outside preparation and the writing of reports for the several classes.

At the first meeting of the class, which will be devoted to organization and filling out of Government Form No. 3, the texts will be discussed and each student is expected to be provided with the necessary texts within one week and for both classes must present a well-kept set of notes, which will count in the determination of the final grade.

The summary of the hours for the second half of the course is as follows:

Schedule of Subjects and Hours

PART II

16 weeks of 12 class hours per week----------192 hours

Subject	Lectures & Recitations	Supervised Problems & Laboratory	Outside Preparation	Total
Engineering Drawing (Theory & Practice)	16	96	16	128
Elementary Mechanics of Materials	30	60	30	120
Totals	46	156	46	248

WOMEN'S BUREAU
U. S. Department of Labor
Washington

OCCUPATIONS AND SKILLS FOR WHICH WOMEN CAN BE TRAINED IN THE DEFENSE INDUSTRIES

The aircraft, machine tools, automotive, electrical, metal parts, sheet metal and ordnance industries all have work opportunities which can be filled by women. Some of these are:

I. Machine operators for light work
   1. Milling
   2. Drilling
   3. Turret lathes of the screw machine type
   4. Light lathes and chucking machines
   5. Tapping
   6. Threading
   7. Buffing
   8. Wet grinding

II. Sheet metal work on light parts

III. Armature and coil winding, and stator and rotor assembly

IV. Welding
   1. Spot
   2. Electric arc
   3. Acetylene

V. Assembling and bench work
   1. Laying-out work
   2. Assembling parts according to blueprints
      a. Burring, scraping, chipping and filing machined parts with hand tools to fit accurately
      b. Using hand tools and mechanical devices as portable drill presses, rivet, arbor and power presses, and electrical screw drivers to fasten parts together

VI. Inspecting
   (Due to fine tolerances in the requirements for most of the defense products the proportion of inspectors is high. Inspectors need a working knowledge of precision measuring gauges, metal hardness testing machines, calibrating indicators and other commonly used mechanical devices for checking products.)

VII. Blocking, grinding, polishing, cementing and inspecting of lenses for the optical goods industry

VIII. Drafting

IX. Other

(Women should be offered short training courses in factory terminology as to tools, materials and machines, production forms, routing, etc., that would prepare them to fit in readily as tool room attendants, stock girls, shipping and production clerks.)

EE:IS
11/14/40

From: Georgina Campbell
The Wallace Thorsen Organization
219 East 49th Street
New York City.

Immediate release

MIDSHIFT MOVIES BUILD MORALE, REDUCE ABSENTEEISM

According to a nationwide survey announced in the current issue of Modern Industry, the industrial management magazine, Hollywood-produced feature pictures and shorts in 16mm size are now an accepted antidote for toxic fatigue and absenteeism in war plants.

"Movies for entertainment are fast becoming important supplemental aids to production", the article states, adding that Midshift Movies - those screened at "lunch time" of any one shift of workers - are liked and wanted by both management and workers.

Some war plants have found that a return to the old "Pearl White" serial technique, showing two reels of any full-length feature each day at the midshift, definitely reduces absenteeism.

Most lunch periods in war plants are of half-hour duration. For this reason, and also because there is often no other suitable space, about 75% of the plants screen movies in their cafeterias. Within eight minutes, employees are seated and have begun to eat, leaving twenty minutes for showing shorts, or two reels of a feature picture. These films are simple to screen, safe to operate (being 16mm size, there is no fire hazard) and their use is an established morale-builder eagerly anticipated by the workers.

"We have found that the use of motion pictures has been valuable to us", states Harold B. Dow, Public Relations Director of the Bridgeport Brass Company, "especially with many hundreds of women employees who have never before worked in an industrial plant."

The head of a large aviation company's "Employee Relations Club" commented that "A carefully planned and well regulated long range movie program would, in my opinion, help a great deal to improve morale, give the workers a lift and more relaxation."

An important fact emphasized in Modern Industry's survey is that movie houses in war plant cities are missing what appear to be highly profitable potential audiences at times when theatres are normally closed. Workers and management feel the greatest morale builder of all would be nationwide recognition ofswing shift workers' recreational problems. In a booklet on this vital subject, the National Recreation Association points out that cooperation on this and other morale matters between plants and local movie theatres would help to solve such problems. Concludes the National Recreation Association: "Theatre managers in many communities have discovered that staying "open all night" for swing shift workers is not only profitable but boosts community goodwill tremendously."

* *

NOTE TO EDITORS:

You'll be interested to know that immediately following publication of the National Recreation Association's booklet, which mentioned that Modern Industry would print the full results of their survey of war workers' recreational needs, requests poured in for reprints of this article at the rate of one hundred a day. These requests are from war plant employers, personnel directors and heads of workers' committees, and confirm the Midshift Movie's value as an absenteeism cure. As Modern Industry remarks, "The successful use of midshift movies in war plants is proved."

Enclosed are reprints of "Midshift Movies Build Morale" from Modern Industry and the National Recreation Association's booklet "Activities for War Workers" (pp. 8-9).

Please phone or write us if we can help you as regards photos, etc.

VARIOUS DEVICES THAT HAVE BEEN USED IN
DISSEMINATING INFORMATION REGARDING TRAINING
FOR
WAR PRODUCTION

I. Utilizing "unique" groups:
   A. Bootleggers were called in to work on copper. (sugar shortage interrupted their usual occupation) In the Southeast.
   B. Gypsy groups were checked through by the various chieftains and all "tinkers" or metal-smiths called in. The police detective in charge of this group made the contact. Portland, Oregon.

II. Distribution of posters and pamphlets of information (usually printed by local school districts:
   A. Distributed through the schools. Utah; Buffalo and New York.
   B. Distributed via milk delivery routes, attached to milk bottles. Rochester, New York.
   C. Distributed through such centers as:
      1. Y.W.C.A's.
      2. [illegible] Clubs
      3. Churches.
      4. Stores (in some cities in Michigan the Chamber of Commerce had pamphlets wrapped in packages in women's stores).
      5. Theaters
      6. Markets
      7. Buses, cars and trains

III. Articles, fictional and factual, published in:
   A. Newspapers
   B. Fictional magazines
   C. Club publications (e.g. Journal of the American Association University Women.)
   D. Trade Journals. (e.g. through Merchants and Manufacturer's Association, Los Angeles, Calif.)
   E. College and University Alumnae publications

IV. Dramatization:
   A. Radio broadcasts. (e.g. Oakland, California) Many of these are broadcast from the training shop, and trainees still in class as well as a few already employed usually speak.)
   B. "Training Class in Action" - Machines were actually installed and a class seen in training in a large store window in Philadelphia, Pa.
   C. Parade through city in Bend, Oregon, ending at the Armory where applicants registered for training.

V. 'Open House' during training hours. (Spokane, Wash. sent formal invitations to citizens through its school print shop.

VI. Speeches, forums, etc.
   A. Women's Clubs. (e.g. pamphlets of information were sent by the General Federated Women's Clubs to their 11,000 local groups.)
   B. Spot announcements made on radio (Los Angeles, Calif., Conn.)
   C. Sound truck. (Bristol, Va.)
   D. Moving picture houses.
   E. Speeches to such groups as:
      Alumnae groups, YMCA, volunteer clubs, Women's Clubs, etc.

F. Regular weekly radio broadcasts (e.g. "Commando Mary" on Sunday)

VII. "Canvassing"

A. Personal conferences with senior college (and school) groups. (In N.Y. students were stimulated to take War Production training during last semester of college, and thus were ready for employment upon graduation.) Utah also did such canvassing.

B. House-to-house canvassing.

C. Registration of interests and abilities of all women (voluntary) in Oregon.

D. Individual recruiting

In Ridgefield Park, New Jersey as well as in cities in New York State. Application blanks were sent to trainees who had completed the course and gotten the job, asking them to give the blanks to friends who might be interested.

As each trainee finished her training and was ready to go out for her first job she was given an application blank. The instructor urged her to boost the war effort by getting one of her friends to register on the blank, come in for training. In this way each trainee filled the station she left.

VIII. Miscellaneous Methods:

A. Fashion Shows of War Production Workers' uniforms stimulate interest in training.

B. Gossip was offered as a means of combatting deleterious rumor and disseminating sound information by the All-American Congress in Los Angeles, California

C. Display of a banner on the school grounds showing the total number of women trained as well as the number still in training. New York State urged competition between towns.

D. In New Mexico the Governor proclaimed the week of October 19 as "WOMEN FOR WAR INDUSTRY WEEK". The state and local AWVS organizations assisted the employment service in recruiting and registering women for war production training. Letters were sent by the State Director of Vocational Training to all local AWVS chairmen. Enclosed with these letters were::

1. Pamphlets telling of training available.
2. Application Forms AT-1
3. Several different types of posters.
4. Current monthly reports on war production training.
5. Copy of the governor's proclamation.

In disseminating information which borders on a "recruiting campaign", schools should work with the United States Employment Service whose responsibility it is to <u>recruit</u>, select and refer trainees for War Production Training.

IX. Further devices recently reported (too late to include in Nos. I to VIII)

A. Junior Commandos distribute publicity material from house to house.

B. A meeting for mobilization for women power. This was held in Columbia, South Carolina. Speakers included representatives of the military branches (WAACS, WAVES, Army and Navy Nurses Corps) civic affairs and war efforts.

C. Women's Recruitment Center. Baltimore, Maryland has established two such centers, one for white and one for negro women. These were organized under War Manpower Commission and are operated by the USES and the Department of Education. A number of stations are set up with trainees operating lathes, driving rivet guns, doing electrical assembly, etc. under the supervision of an instructor. A frieze about the wall shows enlarged photographs of women on the production line and in other war plant jobs. Opportunity is thus given women actually to see what type of work war production work is. Two of the stations are in the two front show windows and thus attract passersby.

Pages missing in original

boys. The aircraft company has equipped additional space and provided instructors to give about 50 boys at a time 320 hours extra training for their plant. The educational director at the plant felt that the 200 hour training course was too superficial. A special course in hand filing and burring had been given in the trade school to train boys for operatives in the Colt plant. Instructors for these courses were provided by the industries.

Special training for women - Last spring an instructor was sent from the Hartford Trade School to the United Aircraft plant to give a special course for women inspectors. The class was held twice a week for two hours at the end of the work-day for 18 weeks. Instruction was given in shop mathematics, scale reading, the use of micrometers, calipers, verniers and indicators, blue print reading, lettering and dimensioning. Special problems on blue print forms were developed to illustrate shop terminology and practices. (An outline of course and some typical problems are contained in Exhibit I) About 100 girls attended the classes and the educational director of the plant felt that the course had been worthwhile. Plans were being made to give a similar course for inspectors this fall both in Hartford and Springfield, Massachusetts. Women could be used more extensively in the aircraft engine plant if women with backgrounds such as this course aims to give were available. At the present time more men than women were being employed as inspectors.

The work which had been offered boys for filing and burring operatives in the Colt plant was of a type that women could do and trade school instructors felt that this was a type of work for which women should be offered training. The Hartford trade school apparently had a good course for girls in the food trades and a restaurant open to the public serving a la carte and club luncheons - table service - was operated giving the girls experience as cooks, kitchen

helpers, waitresses, cashiers, etc. Director of the course said that all who had satisfactory records had been placed. The "least likely" are usually placed in domestic service. The dressmaking course did not include any power sewing machine operation. Girls completing this course were placed chiefly in the alteration rooms of ready to wear stores and as seamstresses in large dry cleaning plants.

Bridgeport

Dressmaking and commercial art were only courses offered by the Bridgeport trade school to women. The General Electric was reported as interested in a course which would break girls in for the electrical industry on operations such as coil winding, soldering, operation of small presses, etc. Bridgeport has been actively aroused to the training of boys for the defense industry. An old school building had been reconditioned and was offering training in sheet metal for the Sikorsky Aviation (United Aircraft) at Straford. Plans are to train 2000 boys there - 300 capacity at one time in school. In talking to one of the instructors from the Sikorsky plant, information was vouched that there are many small parts - thousands - that are formed with templates and have simple drilling operations in their processing which are light work and on which boys were being trained. This instructor said that formerly when airplanes were produced on a custom basis - not more than one or two of a kind - an operator was often required to have considerable versatility in sheet metal work but that at the present time with orders for 1000 or more of the same kind, that work is being standardized and he felt that there was a good deal of light work that could be done by women as well as men.

Springfield Trade School

A large new trade school with a girls' division was opened in Springfield, Massachusetts. Mrs. Margaret C. Ells is assistant principal of the school and chief of the girls' work, which covers courses in beauty culture, millinery

and novelties, bakery and foods, power laundry, retail selling, power sewing machine, and multi-occupations. The latter course is given for training for electrical products and the American Bosch Company is the main outlet for those trained. The work is in several units and includes soldering, armature, stator, coil, condenser, and short winding operations, assembling and inspection. In the inspection unit which requires about 200 hours of class work, blue prints, scales, micrometers, gauges, fractional and decimals equivalents and limits and inspection of materials with indicators are touched upon. See Exhibit II. The instructor is one of the regular shop men and the laboratory work is in the electrical shop. Progress is individual and the class averages about 30 with 120 to 150 being enrolled every year. The inspection unit is going to be handled this year so that work and problems of airplane engine inspection are included along the lines of the Hartford training course. The power sewing machine course trains on five types of machines and an attempt is made to work on a mass production scale making uniforms for the school and other State institutions. About 25 were enrolled in this course.
The boys division are offering emergency courses and Mrs. Ells was much interested and concerned that the girls' training should be extended to meet the needs of the defense program.

Providence Trade School.

With the co-operation of the jewelry trade of Providence a course for women operatives was begun about a year ago. Girls have been sent from the public and school employment offices, and by manufacturers. Instruction is for bench work of the kind that is being carried on at the present time on cheap jewelry. Seven of the jewelry firms are making parts for defense industries. Course is a short one; instruction individual; some stay two weeks, some six. Sewing is the only other course being given women in the trade school.

Co-ordinators to study need for beauty culture, retail selling and food and restaurant work are to be appointed (or have been this year?)

Dr. Allen, assistant superintendent of schools, has appointed a number of co-ordinators who have made special surveys in trades such as printing, wood working, metal etc. to consider the opportunities and needs in this field. Agent was referred to Mr. Sheldon Davis who made their metal trades survey in 1939. Mr. Davis gave copies of his monograph on 'Work Opportunities in the Metal Trades of Providence' and his report 'A study of Problems and conditions in Occupations in the Metal Trades in Greater Providence.' Mr. Davis' study shows that in 1939 of approximately 3800 workers in the smelting and machine tool industry in Providence approximately 300 were women. In December 1939, the date of Mr. Davis' survey, in 20 Providence metal shops he found 135 women inspectors. This was the only direct production job on which women were employed, while there were 1344 men on productive occupations. In the maintenance and service occupations in the metal trades, women were only found as clerks and Mr. Davis estimated that there were probably 140 women clerks. Women constituted considerably less than ten percent of the total. The following tabulations are from Mr. Davis' report.

A STUDY OF PROBLEMS AND CONDITIONS IN OCCUPATIONS IN THE METAL TRADES IN GREATER PROVIDENCE
(Pages 11,12,13)

Providence Public Schools - June, 1940

The following figures show the number employed in the metal trades in twenty concerns in December, 1939:

Productive Occupations--Men

Assembler	434
Drill Press--radial	39
Drill Press--sensitive	175

Furnace tender	13
Grinder	83
Helper	20
Lathe operator--engine	182
Lathe operator--turret	103
Machinist--production	48
Milling machine operator	354
Packer	70
Painter or sprayer	23
Planer operator	14
Punch press set-up man	27
Punch press operator	74
Screw machine automatic	61
Screw machine hand	126
Sheet metal worker	31
	1827

Metal Finishing Occupations

Pickle tub men	4
Plater	19
Plater's helpers	20
Polishers and buffers	74
	117

Productive Occupations--Women

Inspectors	125
Total Productive	2069

Maintenance or Service Occupations in the Metal Trades

Carpenters	53
Clerk--shop	219
Cranemen	3
Electricians	40
Elevator operators	23
Engineers	8
Firemen	28
Helpers	122
Laborers	156
Janitors	86
Machinists	101
Millwrights	32
Oilers	14
Painters	11
Pipe fitters	30
Shippers	46
Stock chasers	13
Stock selectors	34

Tool makers	154
Tool grinders	13
Tool keepers	29
Tool crib attendants	23
Tool room machine operators	18
Truck drivers	22
Truck operators	223
Watchmen	74
	1566

The following tabulation, also, from Mr. Davis' report shows the major job classifications and it is interesting to note that tool makers and machinists, the definitely skilled occupations, include slightly less than ten percent of the workers.

The following table lists all jobs having over one hundred employed and the percentage compared with the total number of workers:

Jobs with Over 100 Workers	No. of Workers	Approximate Percent of Total
Assembler	484	14.14
Milling machine operators	254	7.4
Clerks--shop	219	6.3
Drill press operators	214	6.3
Screw machine operators	187	5.5
Lathe operators	182	5.5
Laborers	158	4.5
Tool makers	154	4.5
Machinists	149	4.3
Inspectors--women	125	3.5
Helpers	122	3.5
Turret Lathe operators	103	3.0
	2351	68.4

The data on size of Providence plants in the metal trades in Mr. Davis' report shows that most of the workers in the metal plants are in the large establishments in which occupations are undoubtedly specialized and broken down into operations for which women could be trained and used.

This report was tabulated from information concerning thirty-four plants in the Providence area, obtained from the October, 1939, report of the Rhode Island State Department of Labor:

Number of workers	Number of plants	Percent of plants	Percent of workers	Number of employed
5-100	25	73.4%	12.7%	988
101-200	4	11.8%	7.3%	564
201-500	1	2.9%	5.5%	433
501 and over	3	8.1%	74.5%	5,780
	34	100.0%	100.0%	7,755

This report shows that three-quarters of the workers in the Providence area are employed in three plants of the metal trades industry, while the remaining quarter of the workers are employed in thirty-one plants.

Trade school courses for training in the metal trades under the emergency program began June 24th and the first course ended August 30th. Mechanical drawing, applied mathematics, and ten shop projects were covered. (See Exhibit III) Approximately 50 hours was devoted to blue prints and mechanical drawing, 50 hours to shop mathematics and 100 hours to shop projects.

1100 boys applied to take the course and about 850 qualified after being given selective tests. Only about 250 were enrolled in the first course, and 247 of these completed it and 215 have been placed. Another group of about 250 are in training along the same lines as the first, while a special course for recruits from the WPA and other unemployed began on

July 30th.

Mr. Davis stated that he was sure that arrangements to include women in the emergency training would be readily made by the Providence Schools if there was a demand for it from manufacturing firms and interested community groups.

"I WAS A WORKER"

Mary G. Currier
Special Assistant to the
State Supervisor of War Production Training

Extracts

Before Pearl Harbor I had been living in a Gulf Coast shipyard town, and knew many of the workers and their problems and also some of management's problems.

I returned to New York to work in a hospital, and entered among the first women the inspection and assembly course of well-known vocational school. There were 150 women in the classes, both day and night, who were of all ages, nationalities, and interests.

I can't recall any woman there, in the winter of 1942, who didn't have a job away from home, at business, or a profession, except the few mothers of families whose husbands were planning to go into the Armed Forces.

My mind was completely made up that I would get a job in a shop as an inspector and learn what I could of working conditions for women in this emergency. I did that in a small New England town full and running over with workers in its machine tool industries. The shops are typical of the specialized ones in country towns. I got a job in a company whose employees had grown in numbers from 400 to 1,300 in a year and a half. There were perhaps a dozen women employed there when I went in. Management was definitely not woman minded, and hadbeen far behind other types of industries in setting up the few changes which had to be made where women are going to be employed. By these changes I mean convenient rest rooms, cafeterias, first aid rooms, andnurses. Women had not been worked in this particular shop and they were hired without any planning done ahead of their employment. They were hired usually with no training. The general opinions of shop management six months ago in these industries were, "We'd rather train you ourselves, and don't care whether you go to war production training classes or not." Men had been deferred with a pretty liberal hand, and most had settled down to the idea they were nearly all essential workers. This discouraged women training for jobs be-

cause they felt, at least until the first of this year, in these particular areas, that they had not been needed.

While at work, I was continually comparing myself, with my 150 hours of training, with the girls and women who came in with none. To be sure, I had the earlier experience and familiarity with a small shop which I had owned with my husband, but that wasn't the answer.

Most of the women had no work habits established, no knowledge of tools, no understanding that the impersonal attitude is the only one to maintain in a shop with men and women workers. Most important to them personally, I believe, was the fact they had received no safety instruction, other than a warning about their machine perhaps from a neighbor operator or their foreman. Rules were not posted, nor instructions given as to proper clothing, and much time was lost in those days ironing out personal relations and everlasting discussions of caps and clothes. I have some pretty strong opinions that no woman should be hired to work in any shop if she insists on wearing what she chooses. There's not one chance in a hundred if she is that determined, that she's ever going to be cooperative about any type of safety, and it is certainly not going to be easy for other women workers to get along happily beside her.

I believe that the future woman worker should be interviewed by the director of women who is properly an assistant to the personnel director. It never seemed quite fair to either the woman's director, or the woman worker, that the woman's director actually in some instances knows the more important incidents of a woman's employment record, plus those of her personal history, and still has no status in the company which gives her authority to advise against that woman being hired or to recommend her termination. I have seen an instance in a shop of several thousand employees where the director of women does not know a single thing of any new women workers who are hired, until those women start coming to her office for advice. In one case a worker would never have been hired if the director had

had a chance to talk to her first. She had very young children and a baby at home. She was working twelve hours at night, and never got proper rest during the day. There is no woman, with or without small children to look out for, but will agree with me in saying that most of these mothers should not be employed till all other sources of our labor supply are exhausted. If there is a case, the personnel manager should know, and after the woman's director investigates there could be the usual exception to all rules, but no great good, at least at this time, will come of making a practice of hiring mothers of very young children. I worked with some of these women, and they are in themselves unsafe workers because of their personal and family worries. And if they're the kind of mothers who don't worry about Measles and Whooping Cough they aren't responsible or conscientious employees anyway.

I worked 54 hours a week, two 12-hour and four 8-hour days or nights depending which shift I was on. There was never any question in my mind but that the 12-hour day or night was non-productive. At least the last two or three hours if it. It is just too long, and other countries and most industries in this country have accepted that as a fact. I have never met any worker, or any foreman if he talks off the record, who didn't agree with that statement.

A woman employee of the type I worked with has done a good day's work in 8 hours. She's enthusiastic, conscientious, and has used up an average amount of physical strength on her shift. She goes home, in many instances a bus or car trip, of from 10 to 50 miles. I worked for several months beside one of the best women inspectors I ever knew. She was nearer 50 than 40 years old, and traveled 50 miles to and from her job every day. On her 12-hour days that meant getting home at 8:30 p.m., and every day it meant getting up at 4:30 in the morning. She had one day off a week and practically never lost a day which certainly could be an answer to those who say, 'We can't take it after 40 or maybe 30.' I drove 35 miles to and from that same job and know something of what it takes. Those of us who are older felt we had to prove that the young men per-

sonnel directors often did not quite understand that women are people, they do support families and they do want to contribute to war production as their privilege and right, and beside all that they do have to eat; and the non-essential jobs we might be doing just don't exist any more perhaps. We're not only giving something to the war effort, we're getting something from it. A contribution which brings its own reward is knowing the sacrifice is needed.

Twelve-hour shifts, 7-7, either day or night, are arranged so the worker is on 6 and off 2. On those days they try to make up for their exhaustion, which is an accumulated physical fatigue--rest and sleep do not suffice. The woman worker needs recreation, plus proper food and time to shop, to get her hair done, and relax mentally. These are not luxuries they are necessities of our physical and mental needs.

And we must bear in mind that in war production areas women are living in crowded quarters, often three and four in a room; there is no privacy and no time to relax. Both men and women away from their homes need recreation. These older workers particularly in the town where I worked with some 12,000 other war workers where there was a dance only one night a week at the Community Club. The one hotel in town had a dance floor with a juke box downstairs, and believe it or not, it was a God-send to us. Many and most days the workers were too tired to dress up. There was no gas, no transportation to out of town dances, or to just sit around and talk shop. Workers would drop in the hotel for a glass of beer, or maybe they wouldn't have a glass of beer, but they would always put a nickel in the music box and dance--perhaps it would be only once, but it was something to do and I know exactly how they all felt. I did it myself night after night when I lived in that town. The proprietor of the hotel and his wife have earned the thanks of those workers in these days of almost no hotel help to provide such as a place to dance. Industries in the country towns should not only look into the matter of whether their employees are on the job, but whether there is any opportunity for recreation for them off the job. I believe it would

pay dividends in production; and if they can't relax in town then they will certainly take days off to get to their homes and friends when they can.

I have from my own shop experience no patience with all the publicity on "absenteeism" which carries with it the inference that a big pay envelope, or a big head, is the only reason the worker is off his or her job. It could be a reason, but it is not the only one.

All the usual reasons for being absent are just as much with us as in normal times, plus the longer hours, accumulated physical and mental fatigue, and housing conditions; which if it weren't for contributing to the war effort, many persons would not tolerate; improper food and a gradual loss of appetite which almost all workers experience after a few months eating in crowded shop cafeterias and restaurants.

There is such a thing as bad planning in the shop, shortages of materials; one department will be held up and others crowded. I know women workers who, on some of those slack days, will take a day off and not feel at all guilty. They know they wouldn't be busy. They go to their homes, rest, get shopping done, and spend some time with their children. On the record it's absenteeism, but actually there is no great loss in production.

I took a safety engineering course while I worked in the shop. It interested me greatly, and it seemed the most useful place to put it to work would be in the war production and vocational training schools. The State Director of Vocational Education in Vermont has been interested enough to look into it, and I'm happy to say he agreed with me, and Vermont has now this program of instructing and supervising safety practices in those war production training schools.

To me it seemed a simple and obvious necessity to give the woman worker proper training for her job before she goes into a shop, and while she is in school teach her safety practices for her own personal protection and for the

possibility that without these instructions she might become an unsafe worker for her neighbors. She will be taught that management has made all necessary and some extra efforts for her comfort in providing adequate and sanitary toilets and rest room facilities. And management has a right and her fellow workers a right to expect that she will contribute a responsible and conscientious effort toward keeping those rooms orderly and clean. Some women workers seem to think the matrons are personal maids, forgetting for the minute that these women do their work at certain hours just as capably as the machine operator or inspector does hers.

Stressing the impersonal attitude to women workers seems to me very important. Many women have never worked with men, and this may be the first time a good many men have worked along side of women. It is difficult for some women not to react in a personal manner to attentions, pleasant or unpleasant, from their foreman or neighbor. If they would only leave their personal feelings in their locker when they go onto their shift, and remember that the only reason they are there is a pretty serious one, to take the place of some man in the services.

I am recruiting women for war production training schools, and the greatest interest, is from older women but one thing which holds them back, and me also, in the program, is the lack of a definite statement from management; that just her age, if it be 40 or even 50, will not bar a woman from employment. And I am of the opinion that if each community will attack their manpower shortage from their own community labor surplus that their needs will in a measure be met, and there will be considerable less employment confusion after the war.

We have only two towns in this State whose industries hire and pay the trainees while at school. In both these towns there are crowded housing conditions. The industries could in a measure partly solve that problem by using local women who can't work 12 hours but probably could, and would work 8 hours; and by giving

some consideration to the part-time employee.

The less we have of re-locating women workers away from their families the surer we are of stable and normal conditions in the home, the community, and the State.

I am perfectly sure from working in overalls beside other women who were perhaps earning the biggest pay of their work experience, or in some cases earning the least income they ever had, there is one thing they all have in common—that is to see this job through. And I've yet to hear one woman say she'll be there when the war is over.

No woman wants to work in a shop on a man's job, and in the nearest thing to man's clothes she can buy-for very long. But she has proved to herself and industry in general she can and will do almost every job equally well with proper training.

And men are not resentful when women get the same pay for the same job they do. They are resentful if she doesn't and I know because I didn't, and the men were very careful to watch my pay envelope or ask me.

The older women are good employment risks. They are free usually to leave home. They feel a greater and deeper need to contribute their effort for the son perhaps in the service. They are emotionally more stable in most instances, and the green fields have not proved to be so green away from home, and they will stay working for the duration where they are.

These women want their homes and families and clubs and schools just as naturally as they always did. Now, they have the added satisfaction that they are contributing to the emergency, contributing generously and well. But most of all I believe the woman worker wants her man and <u>all</u> these men of ours in the Armed Forces to know that their family life, which they left, and which they are fighting to save, will be here when they return.

WOMEN PROVE THEIR WORTH

By

Harry Buck

(SOURCE: "Victory in 1943" -- Aero Parts, Wichita, Kansas)

January 2, 1942, marked an important date in Aero Parts history. 11 girls started training in Aero Parts school. It was more or less an experiment to see if women could do a man's job in sheet metal and riveting for aircraft work.

Just a few days before these girls went into training, the Personnel Director came to me and told me I was to train eleven women for aircraft work. At the moment I thought, "What a headache!" but I told him I would try anything once. On the morning of January 2, 1942, these girls came to school.

The first day was spent in the classroom (drafting room). I showed the girls the different tools used in sheet metal. I did not tell them the name of each tool, but asked them to tell me what they were. They knew the names of about 50 percent of them and their uses. They knew what an electric drill was, but never had seen or heard of an air hammer or rivet gun. They were to be taught sheet metal, layout, drafting and shop work. They were not much interested in layout and drafting, but they wanted to get out in the shop and use the tools I had shown them.

The second day was spent in the shop. I showed them how to use the tools I had shown them the first day. This is the day they started to ask questions and did they ask them! "Why do you use a pencil instead of a scribe?" "Do you use a left-handed Dutchman in your left hand?" "Why do you burr drilled holes?" "What is alclad?" and a hundred others.

The first step was to drill holes. There were some very sorry looking ones. They were supposed to be 3/32 holes, but you could stick your finger through them. So-called bear tracks on the material looked like ant tracks to and from their mound. A few days of practice stopped all of this.

The next step was to rivet. You should have seen some of the rivets! They were murdered! They even drove the rivets clear through the material. After adjusting the air valve on air guns and a week of practice, these girls were beginning to accomplish something. After three weeks of training, their work was amazing. Some of their work was superior to some of the men's.

After weeks of training two girls went to work in the Cowling Department. The rest of the girls soon followed them. One of the eleven has been promoted to Crew Chief of a department, and is doing a remarkable job.

HEADQUARTERS
THIRTEENTH NAVAL DISTRICT
Seattle, Washington

District Civilian Personnel Office

Enclosures A & B have been received from the Navy Department and distributed to Naval activities. These enclosures are forwarded to you for their possible value in connection with your training program.

Yours very truly,

A. H. ROOS
Lt. Comdr., USNR
District Vocational
Training Officer

Nejewander

DISTRICT VOCATIONAL TRAINING OFFICE
THIRTEENTH NAVAL DISTRICT

INDUCTION TRAINING FOR NEW EMPLOYEES

OBJECTIVES.

There are at least four principal objectives which should be recognized in connection with a Program of Induction (sometimes called Indoctrination) Training for new employees, as follows:

1. To develop a general understanding of the organization of the Naval Establishment with special emphasis upon the functions of the Navy Yards and other Shore Stations and their services to the Navy.
2. To assist new employees in becoming acquainted with their new surroundings and adjusting themselves to their new working environment.
3. To develop, on the part of new employees, a proper realization of the importance of their jobs and the contribution they will make to the war effort.
4. To provide new employees with needed information concerning rules, regulations and procedures to be observed by them in their employment and to develop an understanding of all essential points.

DISCUSSION.

For the attainment of these objectives, the outline which follows is intended to be suggestive only. It may, however, be pointed out that there appear to be definite advantages in presenting the topics outlined for the first three sessions, totalling 4 hours, as soon as possible subsequent to employment - preferably the first day on the job. Also, there would probably be some advantages in deferring the material listed for the fourth session until the second or third day of employment, possibly even later. It is further believed that a presentation of the topics listed for the fifth session will be most profitable if held over until about the second week on the job. Occasional additional sessions may well be arranged for at appropriate and convenient intervals to further the morale building effort. Such additional meetings, utilizing appropriate motion pictures, lectures and informal talks to help keep the organization "pepped up", need not be restricted to new employees but might well be made available to older workers also.

DISTRICT VOCATIONAL TRAINING OFFICE
THIRTEENTH NAVAL DISTRICT

SUGGESTED OUTLINE OF INDUCTION TRAINING COURSE

1. First Session - Group meeting (90 min) for all new employees - First day.

Subject: The Naval Establishment, Navy Yards and other Shore Stations and the services rendered by them to the Navy.

a. Presentation of the general topic	20 min.
b. *Motion Picture suitable for general topic	30 min.
c. The job of this yard (or station)	20 min.
d. Motion Picture - "Safeguarding Military Information"	10 min.
e. Explanation of plans for subsequent meetings	10 min.
Total	90 min.

2. Second Session - Group meeting (90 min) for all new employees - First day.

Subject: General Information for New Employees.

a. Working hours; checking in and out; lunch period; shift assignments; time cards	15 min.
b. Rules and regulations; identification; traffic; parking; work clothing	15 min.
c. Safety - talk by Safety Officer	15 min.
d. Motion picture on Safety and Accident Prevention	15 min.
e. Plant security - identification; smoking; fire prevention	15 min.
f. Location and use of cafeteria; rest rooms; first aid and medical facilities; air raid shelters	15 min.
Total	90 min.

3. Third Session - Group meetings (60 min) for each shop to which new employees are to be assigned - First day.

Subject: Specific Shop Information for New Employees.

a. General explanation of work of shop	10 min.
b. Explanation of shop organization	15 min.
c. Special shop rules and regulations	15 min.
d. Location of tool room and system used for caring for tools	10 min.
e. Stowage of street clothing and personal belongings	10 min.
Total	60 min.

DISTRICT VOCATIONAL TRAINING OFFICE
THIRTEENTH NAVAL DISTRICT

4. Fourth Session. Group meeting (90 min) for all new employees - Second or Third day.

Subject: Specific Plant Information for New Employees.

a. Wages; overtime; pay days; deductions from pay, etc	20 min.
b. Leave regulations - sick leave and annual leave	20 min.
c. Efficiency ratings	20 min.
d. General plant organization	30 min.
Total	90 min.

5. Fifth Session - Group meeting (90 min) for all new employees - during second week.

a. Civil Service regulations	20 min.
b. Retirement pensions	20 min.
c. Employee's services	20 min.
d. Other essential information and questions	30 min.
Total	90 min.

GRAND TOTAL 7 hours.

*The following motion pictures, now available, are suggested:

The Navy Ashore	MN-140
Ships of the U.S. Navy	MN-13
Planes of the U.S. Navy	MN-12

DISTRICT VOCATIONAL TRAINING OFFICE
THIRTEENTH NAVAL DISTRICT
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SOSED-1B-SCW
20 June 1943

EMPLOYMENT AND SUPERVISION OF WOMEN IN WAR* INDUSTRIES

INTRODUCTION:

Since more and more women are being hired in war production industries, it is important that careful consideration be given to their limitations, their special skills, and the best methods of supervising them on the job. Despite the obvious fact that women differ as individuals, a few generalizations concerning their employment in industry seem to be in order at this time.

It is true, for example, that some women work because they are patriotic; that others need the money for a livelihood, that some seek glamour, and that others are just curious. Nevertheless, for best results in production, not only these differences in motivation must be recognized, but also some qualities that are generally characteristic of women, and some procedures in supervision that have proved successful.

WHAT WOMEN DO WELL:

I. Simple, repetitive operations.

"Once they learn a job — so long as they are not faced with the need to use their own initiative or make a decision — they can be depended upon to do that job exactly as they have been taught. If trouble arises they bring it immediately to the attention of their supervisor. This characteristic makes possible the close control of production quality."

Example: 30% of the jobs in the sheet metal department of Vultee Aircraft are held by women.

II. Jobs requiring digital dexterity.

Authorities agree that women are faster than men in operations requiring swift and supple movement of the fingers, or in sorting small objects.

LIMITATIONS OF WOMEN WORKERS:

I. Lack of industrial experience results in

1. Poor co-ordination
2. Ignorance of the names and uses of tools
3. Lack of good work habits
4. Lack of familiarity with shop practices and customs

II. Legal limitations concerning their work.

For example, in California ---
1. They cannot lift over 25 pounds.
2. They cannot work more than 8 out of 24 hours.
3. They cannot work more than 48 hours a week, except with the special permission of the California Industrial Labor Department.
4. They must be given a rest period of not less than 10 minutes every 2 hours, and a place to lie down during that period if they wish; or they must sit at their work.
5. If standing at work is unavoidable, latticed platforms must be provided to insulate them from concrete factory floors.

III. Physical limitations; comparison with men.

1. They have smaller, less powerful bodies than men.
2. They have shorter thumbs, longer index fingers.
3. Their arms are so constructed that they cannot bring as much weight to bear on a screw driver.
4. Their center of gravity is in the pelvis. Unlike men, a women cannot brace a tool against her chest continuously without danger of developing physical impairment. Her thrust on a rivet gun, for example, should be from the waist line.
5. A women's lifting strength is about one-half that of a man; her pulling strength about two-thirds.

IV. Psychological limitations and differences.

1. They are more easily discouraged and more sensitive to criticism.
2. They require more praise than scolding.
3. They are often afraid of machines, and bothered by noise and vibration at first.
4. They are interested in their homes and families; they are concerned about getting their shopping done, the care of their children, etc.
5. They appreciate and react quickly to favorable working conditions, but they are more concerned about being in a congenial group of people than they are about the details of the job.

HOW TO ARRANGE FOR EFFECTIVE WORK BY WOMEN:

I. Simplify the jobs.

(This also results in faster, better, and more economical production for men as well as women.)

1. The use of templates for sheet metal work has made blueprint reading unnecessary.

2. Special tools supplied for each operation --- profile and saw blocks, drill jigs, dies, flat templates for power brakes, and form templates for circle shears. Used in combination with the machine tools for which they are intended, they make each fabricating operation a comparatively simple routine.

3. Careful job analysis can result in the breakdown of many difficult jobs into simple routines that women can handle.

II. Make adjustments within the factory system.

The Personnel Department can gather much information about the suitability of certain women for certain jobs:

1. Women with the arms, shoulders, and stamina of a waitress can usually handle such jobs as the prime painting of sheet metal parts on the moving conveyor line.
2. Some women can take over some jobs usually done by men without any further adjustment.
3. If woman reacts nervously to her job, the tempo of a different job may add to her efficiency.
4. Assignment of jobs can often be improved by careful consideration of her past experience.
    a. Did it require manipulation, dexterity and speed?
    b. Did it require alertness and good eyesight?
    c. Did it require skill but limited strength?
    d. Did it require the operation of large, properly protected machines?
    e. Was it clerical or administrative in nature?

Extra muscular effort, stretching, and climbing should be reduced wherever possible:

1. Tools should be planned for possible use by women. Automatic, hydraulic, pneumatic, and electrical tools and equipment cut down on skill requirements and reduce fatigue. Examples:
    a. A hydraulically-actuated bench vise with pedal control is now used in the sub-assembly department of Vultee Aircraft, Inc. "The jaws are brought quickly and easily together by applying foot pressure on one of the pedals. Less effort than in using an automobile's hydraulic brakes is required to clamp the jaws together with great force by using a second pedal. A third pedal trips the jaws free in an instant.

b. Because women lacked the "ability to apply pressure that would feed a drill rapidly without causing it to cramp and break", a pneumatic drill has been devised to apply constant pressure, equalized for each operation. The results were better, the speed greater, and fatigue was reduced.
c. After noticing that a woman employee used a mallet to loosen the crank handle of a vise holding parts to be milled in a machine shop, the engineers installed an automatic mill vise, air operated. A flip of a valve releases or tightens the jaws quickly.
d. A combination bucking bar and rivet hammer enables a woman to do the work that once required two men. It is suspended with a counter-balance and its operation requires no more physical exertion than shooting an automatic pistol.

2. Parts should be mechanically transported.

On a powered conveyor assembly line, women work easily with air-driven wrenches and screw drivers, lightweight electric drills, and rivet squeezers.
Lift-trucks should be used in non-conveyorized areas.

3. Supports should be arranged to bring working positions within women's height limits and to eliminate stretching, climbing, and lifting.
   a. Jigs may be mounted on trunions.
   b. Stands and platforms can be supplied for the women to stand within easy reach of their work.
   c. Much equipment, even lightweight, should be suspended from counterbalances to eliminate lifting.

HOW TO DEAL WITH WOMEN WORKERS:

Foremen and assistant foremen should be prepared to handle women employees. They should be given information about the abilities, limitations, physical and psychological characteristics of women workers. Also, the following suggestions about training green women workers might be helpful to them:

1. Get off to the right start in teaching the women. They are impressionable. The first few hours may establish their attitude toward their work. Be kindly, business-like and make them feel that the work they will do is important.

2. Proceed slowly for about the first two weeks. After they lose their fear of the machines, and after they become accustomed to the noise and vibration, they may be quicker than men in their work.

3. Help women who have never worked in industry build confidence in themselves. Help them see that they can do the job successfully, that they need not feel "dumb".

4. Since the women are unfamiliar with terminology, encourage them to ask questions, and give them considerable drill on the names of machines, machine parts, and operations. Use visual instruction--diagrams, pictures, slides, films, actual models and demonstrations whenever possible.

5. Be friendly with all women workers, but not familiar. Avoid even the appearance of favoritism--women are quick to detect it.

6. Arrange congenial groupings in the shop. Women of the same background and general interests should be grouped together to get the best results, and older women should be included with young girls to stabilize the group.

7. Plan to have patience in teaching women. They cry easily. They cannot stand being "bawled out". They are sensitive to criticism of their work; they are likely to take such comments personally. But experience has shown that women are anxious to do well, conscientious and appreciative of assistance and instruction.

8. Women like to know what they are doing and why. If it is not a military secret, give them broader explanations or reasons for their job. Relate it to things they understand.
   Remark of a woman riveter at Curtiss-Wright: "after you catch on to the trick of holding the bar square, you think about that wing and the plane on which it will go and the pilot who will fly it and how many Japs or Germans he will knock out of the sky."

9. Orientation should include a trip through the entire shop where the women trainees can see all of the machinery. Explain what each machine does, and how it fits into the total picture.

10. In your effort to be kind, don't do a woman's work for her or she will become bored. Help her to do it well by herself.

11. Be interested and enthusiastic over the job. If not the trainees will not be mentally alert and interested.

12. Recognize that there are differences in individual accomplishment. Check each trainee's work every day to see if she is going too slowly or too rapidly. The hasty ones may be careless; the slow ones may become discouraged.

13. Avoid long lectures on theory. Remember that women are not interested in the job as a career, but in helping to win the war.

14. Good housekeeping in the shop, in restrooms, and in lunchrooms helps keep up the morale of the women. Cleanliness of uniforms or work clothes, and personal cleanliness can be encouraged by good restroom facilities--hot and cold water, good soap, enough towels, mirrors. Make reasonable rules about the use of the restroom and the women will abide by them. If good conditions prevail, ten minutes at the end of a two hour stretch of work are enough.

15. Accept women's interest in dress realistically. Some dress to kill, others are more interested in utility. All need to understand why certain recommended garments are safe and suitable if they are to adhere to the regulations.

16. Women need more safety instruction than men because of their lack of familiarity with tools and machines. Relate such instruction to experiences they understand. Once they understand the regulations, they are more careful. Their safety records are higher than those of men.

17. Always seek ways of making the work light. If any lifting is necessary, teach the women how to use the leg muscles and large muscles in the back. Look for labor saving devices. Encourage the women to find short cuts, to life easily, to use levers. At many jobs, they can increase their output by alternating sitting and standing positions.

18. Women should be encouraged to eat a well balanced lunch, including something hot. The lunch period should be not less than thirty minutes.

19. A foreman should be tactful, wise, and understanding in his treatment of women workers. He should be able to sooth ruffled feelings as well as to administer first aid. Women are inquisitive and willing to learn. For a competent and tactful foreman, they will be loyal and conscientious.

SPECIAL PROBLEMS IN THE SUPERVISION OF WOMEN:

I. They are often unfamiliar with the impersonal induction procedure of a large industry. If you are supervising such a woman employee:

   1. Help her to feel at home in the plant. Show her the machines. Introduce her to her fellow workers.
   2. Instruct her thoroughly about her job.

a. Explain trade terms and practices.
b. Assume that she knows nothing about this job, but link it wherever possible to her past experience.
c. Explain one step at a time. Make sure she understands each step before going on to the next one.

3. Gain her confidence.
a. Show interest in how she is getting along.
b. Be tactful and polite but not familiar.
c. Be strictly impartial.

II. Their sensitivity to reprimand can be overcome if you are careful to:

1. Make sure the reprimand is deserved.
2. Reprimand in sober judgment, never in anger or irritation.
3. Reprimand in private. Do not make an "example" of a woman employee.
4. Talk straight to the point, but be tactful and polite.
5. Show the woman how to improve her work.
6. Allow her to save her face or to say the last word.
7. Keep calm and collected.

III. Some women may distract male employees or try to get you to put supervision on a man to woman basis. Your procedure should be:

1. Keep the distance of your authority, and be as impersonal as possible.
2. Praise the work when it deserves to be praised, never the individual worker. Since some women get more satisfaction out of being praised than in doing a good job, you must carefully build up their pride in their work.
3. After the women are inducted properly into industrial responsibilities, give them no special privileges other than those relating to physical limitation. Avoid special privileges which encourage the particular absenteeism often condoned among women employees.

IV. The grievances of women must be taken seriously, lest they spread throughout the shop and later among potential women recruits in the community.

1. Common causes for women's grievances.
a. About the job or plant
(1) Difference in pay rate between men and women on the same or similar jobs.
(2) Extent of overtime work.
(3) Night shift.
(4) Hot moist working conditions.
(5) Dirty washrooms or restrooms, lack of mirrors.
(6) Lack of eating facilities.
(7) Lack of time to attend to personal errands such as shopping, beauty parlors, etc.
b. About their advancement or fellow workers.
(1) Personal failure to make quick progress on the job.
(2) Apparent favoritisms to another attractive woman.
(3) Uncongenial companions.

2. What you can do about these grievances.
   a. In general, determine whether or not they are valid. Give the worker a fair hearing. If her grievance is justified, let her know that you are concerned about it.
   b. For grievances about the job or plant -
      If her grievance is justified, make an honest effort to improve the situation. If change is impossible let her know that you have tried and that you regret the delay. Whenever possible, help her to remedy the situation if it is within her power.
   c. For grievances about personal advancement or lack of skill -
      Place her with women with a comparable degree of skill at the same stage of learning.
      Be sure she is assigned to a job which best suits her background, abilities, and temperament.
      Show her the standards she must achieve before she can be advanced.
      Help her to increase her skill.
      Shift personnel occasionally to avoid cliques and favoritism.

*This report, compiled by Lt. (jg) C.J. Anderwald, USNR, while on temporary duty in SOSED, is based upon (1) a report on the same subject developed by Lt. Anderwald while he was employed as a Regional Supervisor of Defense Training in New York State, and (2) a report of a conference on "Supervising Women in Industry" prepared by Lt. Comdr. Geo. C. Mann, USNR and submitted to SOSED by Capt. L. W. Hosselman, USNR., District Civilian Personnel Officer Eighth Naval District Headquarters, New Orleans, La.

MORE WOMEN TRAIN FOR WAR INDUSTRY

Federal Program Enrolls Many More Feminine Students Than Took Courses Year Ago

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 29 — A great increase in the number of women undergoing training for war industry was reported today by Layton S. Hawkins, director of the vocational training for war production workers program in the Office of Education.

"About three-fourths of all the men and women we train go into aircraft construction or maintenance, shipbuilding or machine-tool production," Mr. Hawkins said.

Increasingly women are going into heavier types of employment, he added. From riveting, sheet-metal work and light assembly, women have gone into machine-tool work, operating lathes and milling machines, and welding, especially lighter types. Some women are shipyard welders.

Under the training program, in which about 350,000 persons are enrolled, slightly more than 2,000,000 are trained a year. This training of war industry personnel and other potential employables is sponsored by the public vocational schools.

To illustrate the increase in women's enrollment, Mr. Hawkins pointed out that of 106,439 new enrollees in courses in October, 48,446 were women, compared with a similar class of 69,970 enrolling in October, 1941, of whom 3,023 were women.

In another training course designed to supplement the skills of persons already employed in war industry, 26,229 of 113,570 enrolling in October were women. In the same months of 1941, 295 of 80,985 entering training were women.

In college-level training, namely the engineering science and management war training program of the Office of Education, at present about 275,00 persons are enrolled, of whom 19 to 20 per cent are women. The number of women has increased gradually, the report said.

FIRST LADY MAKES PLEA

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LILLIAN GREENE.

Plain, N. Y., Dec. 28, 1942.

Approved Method Employed

EDITOR OF THE NEW YORK TIMES:

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TRAINING - 1940

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

WASHINGTON

November 26, 1940

Miss R. J. Nyswander
Division of Public Information
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Nyswander:

In accordance with our telephone conversation, I am enclosing certain publications relating to the various aspects of national defense training.

If I can be of any further assistance please let me know.

Very truly yours,

Jack Barbash

Jack Barbash
Technical Assistant

Enclosure

Nov. 7, 1940

Robinson

Women's Bureau
U. S. Department of Labor

A. Women's Vocational Training Needs in the Defense Industries

During recent months the Women's Bureau has made inquiry as to the employment and expanding possibilities of women's participation in the defense industries in occupations and skills for which they are especially adapted. Approximately 40 plants having defense contracts for products in which women could be employed were visited. These included aircraft plants making engines, instruments, parts, and assembling planes; machine tool manufacturers; factories fabricating iron, steel, brass and aluminum products; plants making electrical products, ammunition and firearms, rubber products and gas masks. All but a few of those had women employed and as the momentum of the defense program gets underway and reaches its full capacity and as the backlog of unemployed men decreases, the need for and the advantages of employing women will be markedly increased.

General skills needed by women in the defense industries

The aircraft, machine tool, instrument, electrical and metal fabricating industries have a considerable number of relatively light operations for which women are adapted which require skills such as the ability to interpret blueprints, the reading of scales, micrometers, calipers, a knowledge of metals and their hardness, the speeds and feeds of cutting tools and a familiarity with shop mathematics as related background information applicable to jobs such as machine operators, inspectors and assemblers.

Machine operators

Expanding industries report a shortage of operators for machines and since women are successfully operating milling machines; single, mutiple and radial drills; light lathes and chucking machines; boring, reaming, tapping, threading, grinding, buffing machines; and punch presses, they should be offered trade school and shop training in machine operator courses. If women are to be really effective and advance their skill and usefulness on such operations, a knowledge of the setting up and operating principles of the basic production machines should be a part

of the training offered them in vocational schools. Also, plans should be made to include them in the "training within industry" and "brush up" courses which are being offered.

Assemblers and bench workers

The occupational field for bench workers and assemblers is large in most of the defense industries concerned with metal parts. Many assembly operations are light, finger dexterity and ability to concentrate on small repetitive details being desired qualifications. The assembly of the many types of instruments used by airplanes and the small electric motors are typical examples. Assembly and bench work often requires such occupational skills as burring, filing, operating arbor and rivet presses, spot welding, soldering, cleaning with compressed air, use of mechanical screw drivers and hand tools. Women have been reported as especially efficient on soldering and spot welding. For this type of work as well as for machine operating women's development of skill would be benefited by shop training in the listed skills and by related instruction in shop mathematics and blueprints.

Inspectors

The proportion of inspectors is high in all defense industries as government standards are based on slight error tolerances. Some inspection requires only visual checking to pull out defective parts and irregularities but much of the work in the aircraft, automotive, machine tool, instrument, safety devices and ammunition industries involves checking requiring the use of precision gauges, scales, reading of blueprints, mechanical drawings, calibrating, inspection meters and indicators.

Welding

Women are employed at present only to a limited extent as acetylene and electric welders, but when employed their production and skill has been commended. Since the defense industries have many openings for welders, if girls were trained as welders for light work, they would be useful to industry and would possess a skill which has placement opportunities.

Sheet metal work

In the manufacture of the fuselage and wing construction of airplanes, there are reported to be thousands of small light parts of duralumin which are formed with the aid of templates. Boys are being trained for this work, and girls, too, should be afforded opportunities to prepare for work of this kind.

Armature, stator and coil winding

Women have been employed extensively for many years in the electrical industries on armature, stator and coil winding operations. As these industries expand, women will be required to fill the new jobs and their training for this work should be considered.

Optical grinders, polishers and operatives

Firms engaged in the production of optical instruments and equipment have large contracts. The blocking, grinding, polishing, cementing and inspection of lenses were occupations for which women were trained and placed during the World War. In the centres for this industry, women should be afforded training for the skills needed for optical goods production.

Other training plans

The preceding are some of the selected occupations and skills for which women should be trained to share in the defense program. Many other occupations and needs for women will develop. The expansion and opening of new arsenals and divisions of ordnance departments of the government throughout the country will require a large number of women on munitions and other military-navy supplies and the training needs for these must be planned.

In the needle trade, textile and rubber industries in which women have been important numerically for many decades, employment is increasing. Since there has been widespread unemployment in these fields, each community should have an awareness of its own need for refresher courses and be ready for the time when training programs for new workers should be launched. Power sewing machine operators for factories other than clothing such as bedding, tarpaulins, tents, gas masks and others are in demand and the needs of these must be considered.

3. Production aids for factory planning and administration

With the increasing volume of work, opportunities for production aids as factory clerks develop. Stenographic and bookkeeping training are not needed for such jobs but a knowledge of factory procedures, terminology as to factory jobs, tools, machines, and processes, blueprint specifications, routing of orders, production forms, etc. should be considered in the training of women clerks.

Tool room attendants

Women are occasionally used as tool crib clerks and attendants. For such work a knowledge of types and names of tools and of systems of keeping records of the issuing, condition and supply of tools on hand is necessary. Grinding and cleaning of tools is usually done in the tool room but women could be trained for this field.

Drafting and mechanical drawing

Draftsmen and drafting room assistants are in demand in many industries. Training for this field requires a longer training program than for most of the occupations considered for women. Women have demonstrated their ability as tracers and general assistants in this field and training courses should be open to them for future needs.

C. WOMEN'S VOCATIONAL TRAINING NEEDS IN THE DEFENSE SERVICES (Other than professional)

I. Health Services

The assembling of large masses of persons in camps, the crowding of persons into defense production centers, the operation of many new factories in undeveloped communities, increase the need for women's service in the care of the sick and in the maintenance of health. As trained nurses are called into the Army and Navy services in larger numbers, the civilian population needs, as well as the Army and Navy hospitals, require the preparation of qualified individuals to assist with the care of the sick when the skill of a registered nurse is not necessary or necessary only for supervision.

1. Ward Helpers in Hospitals

Women assigned to the nursing department of a hospital, who perform routine duties in hospital wards, including simple procedures concerned with the personal care of patients and with housekeeping functions.

2. Nursing Aides in Homes

Women assigned to care for mildly ill, chronic, convalescent, handicapped or aged persons who do not require a registered nurse, and to care for children and the household when the responsible head is ill.

3. Physiotherapists

4. Laboratory Assistants

Women assisting laboratory technicians in routine laboratory work.

5. Health Clinic Assistants

Women assisting trained nurses and doctors in health clinics to prevent development of epidemics.

6. Occupational Therapeutists

This work was of vital importance after the World War in restoring normal use to injured parts of the body and may be of increased value again.

7. Dental Assistants

As the demand for dentists is increased by the Army and Navy needs, some part of their duties can be carried by women trained to supplant the work of the Dentists.

II. Food Preparation and Servicing

The building of Government arsenals in undeveloped communities, the use of guest houses adjacent to army camp service clubs, the increase of hospital services, and the expansion of defense plants, call for an expansion of cafeteria food preparation and servicing in these areas. Better public food preparation, everywhere, has resulted from the entrance of women into this field; every community should provide vocational training of women in commercial food preparation and servicing.

III. Public Housekeeping

While the increased need of public housing is not as extensive as the need for public food services, new communities will require some of this type of housekeeping service.

IV. Radio Receiving and Transmission

The increased use of the radio in the carrying out of military maneuvers, as well as in civilian activities, warrants training of women in this field. Ground service attendance in dispatching airplanes may be a new field for women as men go into the national air service.

V. Photography

The increased use of the motion picture camera in military maneuvers, as well as in civilian activities, warrants training of women in photography.

VI. Automobile Mechanics

In serving back of the lines in Red Cross ambulance work, women need not only to know how to operate but to repair their cars.

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Women's Bureau
W.S Dept of Labor

NN. 7, 1940

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Other training plans

The preceding are some of the selected occupations and skills for which women should be trained to share in the defense program, and time [illegible] many [illegible] occupations and needs for women will [illegible] develop.

The expansion and opening of new arsenals and divisions of ordnance departments of the government throughout the country will require a large number of women [illegible] munitions and other military-navy supplies [illegible] and the training needs for these must be planned [illegible].

and rubber industries

In the needle trade and textile [illegible] in which women have been important numerically for many decades, employment is increasing. Since there has been widespread unemployment in these fields, each community should have an awareness of its own need for refresher courses and be ready for the time when training programs for new workers should be launched. Power sewing machine operators for factories other than clothing such as bedding, tarpaulins, tents, gas masks and others are in demand and the needs of these must be considered. [illegible].

Single Space please

B. Production aids for factory planning and administration

With the increasing volume of work, opportunities for production aids as factory clerks develop. Stenographic and bookkeeping training are not needed for such jobs but a knowledge of factory procedures, ~~job~~ terminology as to factory jobs, tools, machines, and processes, blueprint specifications, routing of orders, production forms, etc. should be considered in the training of women clerks.

Tool room attendants

Women are occasionally used as tool ~~crib~~ clerks and attendants. For such work a knowledge of types and ~~terminology~~ names of tools and systems of keeping records of the issuing, condition and supply of tools on hand is necessary. Grinding and ~~conditioning~~ cleaning of tools is usually done in the tool room ~~and~~ by women could be trained for this field.

Drafting and mechanical drawing

Draftsmen and drafting room assistants are in demand in many industries. Training for this field requires a longer training program than for most of the occupations considered for women. Women have demonstrated their ability ~~in~~ as tracers and general assistants in this field and training courses should be open to them for future needs.

VOCATIONAL TRAINING FOR WOMEN WAR PRODUCTION WORKERS

Department of Education

Number of Women Trained	Cumulative from July 1, 1940	
Latest date for which figures are available	Preemployment Courses	Supplementary Courses
July 31	546,105	739,812

ENGINEERING, SCIENCE, MANAGEMENT, WAR TRAINING

(Over 200 colleges, universities, etc., have conducted such courses)

Number of Women Trained	Cumulative from July 1, 1940
Latest date for which figures are available	
Oct. 1944	256,000

Women's Bureau
U. S. Department of Labor
Washington

November 7, 1940

C. WOMEN'S VOCATIONAL TRAINING NEEDS IN THE DEFENSE SERVICES
(Other than professional)

I. Health Services

The assembling of large masses of persons in camps, the crowding of persons into defense production centers, the operation of many new factories in undeveloped communities, increase the need for women's service in the care of the sick and in the maintenance of health. As trained nurses are called into the Army and Navy services in larger numbers, the civilian population needs as well as the army and navy hospitals, require the preparation of qualified individuals to assist with the care of the sick when the skill of a registered nurse is not necessary or necessary only for supervision.

1. Ward Helpers in Hospitals

Women assigned to the nursing department of a hospital, who perform routine duties in hospital wards, including simple procedures concerned with the personal care of patients and with housekeeping functions.

2. Nursing Aides in Homes

Women assigned to care for mildly ill, chronic, convalescent, handicapped or aged persons who do not require a registered nurse, and to care for children and the household when the responsible head is ill.

3. Physiotherapists

4. Laboratory Assistants

Women assisting laboratory technicians in routine laboratory work.

5. Health Clinic Assistants

Women assisting trained nurses and doctors in health clinics to prevent development of epidemics.

6. Occupational Therapeutists

This work was of vital importance after the World War in restoring normal use to injured parts of the body and may be of increased value again.

7. Dental Assistants

As the demand for dentists is increased by the Army and Navy

needs, some part of their duties can be carried by women trained to expedite the work of the Dentists.

II. Food Preparation and Servicing

The building of Government arsenals in undeveloped communities, the use of guest houses adjacent to army camp service clubs, the increase of hospital services, and the expansion of defense plants, call for an expansion of cafeteria food preparation and servicing in these areas. Better public food preparation, everywhere, has resulted from the entrance of women into this field; every community should provide vocational training of women in commercial food preparation and servicing.

III. Public Housekeeping

While the increased need of public housing is not as extensive as the need for public food services, new communities will require some of this type of housekeeping service.

IV. Radio Receiving and Transmission

The increased use of the radio in the carrying out of military maneuvers, as well as in civilian activities, warrants training of women in this field. Ground service attendance in dispatching airplanes may be a new field for women as men go into the national air service.

V. Photography

The increased use of the motion picture camera in military maneuvers, as well as in civilian activities, warrants training of women in photography.

VI. Automobile Mechanics

In serving back of the lines in Red Cross ambulance work, women need not only to know how to operate but to repair their cars.

December 3, 1940

Miss Grace G. Glascott
726 Standard Building
Cleveland, Ohio

My dear Miss Glascott:

Upon receipt of your letter of November 18, I tried to assemble such material as I thought would give you a complete picture of the vocational training program as it has been organized in relation to defense production needs.

A law, passed by the Congress during the summer of 1940, authorized the Vocational Division of the Office of Education to undertake the job of training workers for defense industries. The sum of $15,000,000 was appropriated to carry on this program. Although the Federal Office of Education is ultimately responsible for the standards of vocational training, State boards of vocational education actually plan the courses that shall be given in any State. These plans must be submitted to the Office of Education and approved by that agency. The lines of training in which courses may be organized are limited to occupations essential to the National Defense. The Advisory Commission to the Council of National Defense has the responsibility of defining the occupations essential to the National Defense. The Federal Act providing for this vocational training for defense provides that all trainees shall be selected from the register of the public employment offices or from workers already employed. As the purpose of the training program is to prepare as rapidly as possible skilled workers to fill positions in the defense industries, the employment offices select from their register first those workers who have had some experience in the kind of work for which the training is to be given. As all W.P.A. workers are registered with the employment offices in their localities, some of these workers, of course, will be certified for vocational training providing they have had some experience in the fields for which training is being offered.

We understand much good work in vocational training for defense needs has already been started in Ohio. Mr. E. N. Dietrich, Executive Officer of the Ohio Board for Vocational Education at Columbus, can give you full information about the training program in Ohio. Mr. Morris Klynn, State Director of the Employment Division of the Works Progress Administration, Columbus, can give you information concerning the training that is being given W.P.A. workers under this program. Mr. Klynn can also give you, I presume, the name of the man in charge of this work in

Cleveland. I understand that he is very able and that an excellent program has been set up in Cleveland where hundreds of W.P.A. workers are receiving training in foundries.

Quite distinct from the work being done by the Office of Education through State boards of education is the Training Within Industry program, which is being sponsored by the National Defense Advisory Commission and directed by Mr. C. R. Dooley, loaned to the Government by the Socony-Vacuum Oil Company. This so-called upgrading training is given within industry itself at industry's own expense. The Government's share in this program is strictly advisory. The Training within Industry Division expects to open 22 offices in industrial areas within the United States through which experts in this field will advise with employers interested in setting up such in-service training courses within their own plants. In Cleveland, Mr. Oscar Grothe of the White Sewing Machine Company is representing the National Advisory Commission in connection with the Training within Industry program. No doubt Mr. Grothe will be very glad to consult with you about his work.

I believe from the material which I am inclosing you will be able to get many of the details concerning vocational training for defense which I have not been able to give you in this letter. If we can be of any additional service to you, please call upon us.

Sincerely yours,

Louise Stitt, Director,
Division of Minimum Wage.

Inclosures
LA:MHG

In sending you the enclosed material that we have collected from the Office of Education and the Nat'l Advisory Defense Commission, I hesitate to offer any supplementary explanations, but a few comments may be in order.

I believe you will find the work of the Office of Education clearly described as to the "refresher" and the "supplementary" training courses. In the former will be the WPA enrollees, who receive the usual WPA wages while they take this training course; if they obtain a job as a result of their study, well and good, if they don't, they return to WPA rolls. ~~The man to tell you about~~ further details on this can be had from Mr. Morris Klynn, State Director of the Employment Division of the WPA, Columbus, and I am told the local Cleveland man is very capable; Mr. Klynn will give you his name (I do not know it). The latter training course - "supplementary" - is given to workers outside of working hours and the instruction is along lines related to the present occupation; a carpenter may thus acquire proficiency in reading blue prints, that will enable him to be promoted on the job. The third training program of the Office of Education applies to rural and non-rural youth just out of school, where the instruction is not as specific as that given under the"refresher" and "supplementary" programs, but is rather a general preparatory training. The objective here is not immediate placement on a definite job such as is envisaged in the other two plans. It is here that the NYA enters the picture, in supplying the work projects on which the young people receive their ~~general~~ operative skills.

The Office of Education emphasizes strongly that their work is all done through ~~that~~ the State Boards for Vocational Education. Each State has its own plan, which is submitted and approved here in Washington, and it is not necessarily the same plan that another State has. Where ~~the~~ State funds are not sufficient for this additional vocational training, Federal funds are allowed by the Office of Education to pay for the extra instructors the State Board for Vocatinnal Education finds are needed. In other words the U. S. Office of

Education only assists the States by furnishing personnel for the instruction courses.

The Nat'l Defense Advisory Commission is sponsoring the "up-grading" in plants and factories through in-service training, but no Federal funds will be paid to industry for this - it will pay for it itself. The Commission's function is advisory only. In Cleveland the person who is representing the Commission is Oscar Grothe, of the White Sewing Machine Co., and I am sure he will be glad to explain how his committee functions.

We understand much good work in vocational training for defense needs is already started in Ohio; in Cleveland hundreds of WPA persons are already receiving training in foundries, etc. ("refresher" courses). If you will write to Mr. E. N. Dietrich, executive officer of the Ohio Board for Vocational Education at Columbus, he can give you full information about all the training programs in Ohio.

Memo to: Miss Anderson and Miss Blenburg From: I. B.

Subject: General findings and comments on visits to trade schools and plants having defense contracts on training of women workers in Hartford, Bridgeport, New Haven and Waterbury, Connecticut; Springfield, Massachusetts and Providence, Rhode Island.

Date: September 23 to October 1, 1940

Trade Schools - Connecticut

Connecticut has twelve State trade schools located in Bridgeport, Danbury, Hartford, Manchester, Meriden, Middletown, New Britain, New Haven, Putnam, Stamford, Torrington and Willimantic.

Their purpose is stated as the preparation of youth for self-respecting and self supporting citizenship by equipping each individual to advantageously enter employment in a skilled trade.

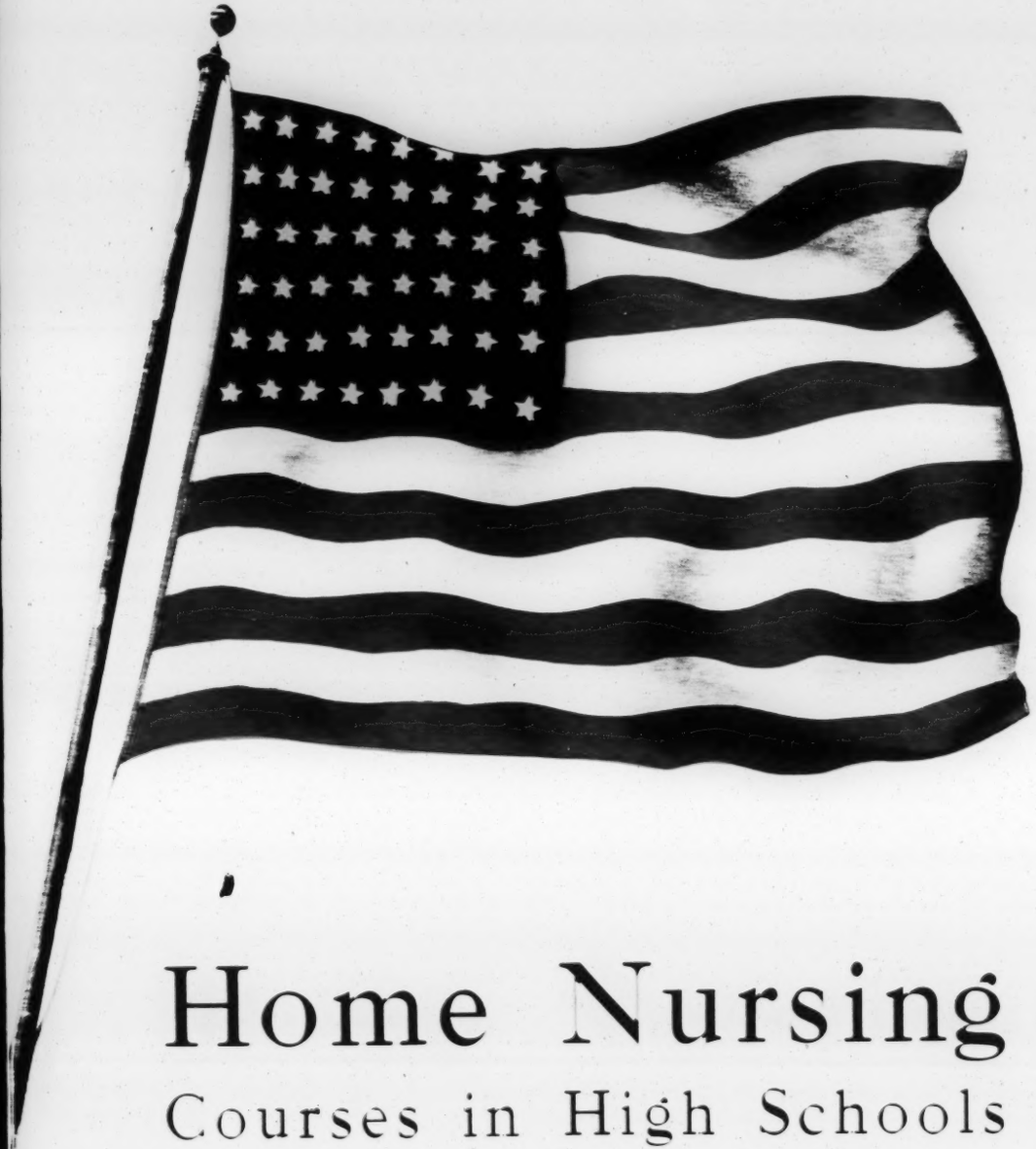
Training offered girls has been along the lines of beauty culture, dressmaking and the food trades. Boys have been offered training for aircraft, automobile repair, carpentry, drafting, electrical, foundry, machine, masonry, painting, plumbing, printing and pattern-making trades. The trade schools in Hartford and Bridgeport, Connecticut were visited as these two had been reported as having well developed plans and school set ups for the defense industries.

Hartford - Trade Schools and training programs in local defense industries.

The United Aircraft airplane engine plant in East Hartford, Pratt & Whitney machine tool plant in West Hartford and the Colt's Patent Fire Arms Manufacturing Company, all have large defense contracts and the trade school has co-operated in training workers for these plants under the emergency training program. Special 200 hour emergency courses giving summary instruction in blue print reading, general principals of shop mathematics, and an introduction to the operating of a few of the basic production machines as lathes and drill presses has been offered and is being offered

TRAINING - 1941

Education and National Defense



Home Nursing

Courses in High Schools

Education and National Defense Series

Pamphlet No. 9

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

Inter-Agency Consultants to the U. S. Commissioner of Education on Education and National Defense[1]

W. W. Alexander, Federal Security Agency

Mary Anderson, Women's Bureau, Department of Labor

Martin F. Carpenter, U. S. Employment Service Division, Bureau of Employment Security, Social Security Board, Federal Security Agency

D. H. Davenport, Bureau of Labor Statistics, Department of Labor

Dr. Warren F. Draper, U. S. Public Health Service, Federal Security Agency

C. A. Dykstra, Selective Service System

Lloyd Eno, Division of State and Local Cooperation, Defense Commission

Capt. C. W. Fisher, Shore Establishments Division, Department of the Navy

A. F. Hinrichs, Bureau of Labor Statistics, Department of Labor

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Floyd W. Reeves, Office of Commissioner of Labor Supply, Defense Commission

Collis Stocking, Research and Statistics Division, Bureau of Employment Security, Social Security Board, Federal Security Agency

Bruce Uthus, Work Projects Administration, Federal Works Agency

Caroline Ware, Office of Commissioner, Consumer Protection, Defense Commission

Aubrey Williams, National Youth Administration, Federal Security Agency

M. L. Wilson, Department of Agriculture

(See inside back cover for U. S. Office of Education General Planning Committee)

[1] The President authorized the Administrator of the Federal Security Agency to designate the Commissioner of Education as coordinator of educational policies of the Government for schools and colleges in relation to national defense. Representatives of various governmental agencies are, therefore, giving consultative service to the U. S. Office of Education in performing its function with respect to schools and colleges throughout the country. (See page 19 of this pamphlet.)

HOME NURSING

Courses in High Schools

Education and National Defense Series
Pamphlet No. 9

FEDERAL SECURITY AGENCY - - - *Paul V. McNutt,* Administrator
U. S. OFFICE OF EDUCATION - *John W. Studebaker,* Commissioner

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FOREWORD

AMERICA must be strong—strong to meet any threats against her way of life from armed aggressors; strong to solve her domestic problems by peaceful democratic means. To the building of a stronger America the schools of the Nation are dedicated. By the patient processes of instruction and training they seek to develop in the youth of the land those essential knowledges and skills and that devotion to our democratic way of life which make for national strength and unity.

The special contribution which the schools can make to National preparedness at the present time is a matter of serious thought by teachers, principals, superintendents, and others concerned with the operation of the Nation's great educational enterprise. All are agreed that the schools must become increasingly vital centers for the education of youth and adults facing a war-torn world. But how?

The U. S. Office of Education seeks to suggest some answers in a special series of pamphlets entitled "Education and National Defense." This number in that series deals with the conservation of our national health, and undertakes to show how the schools can contribute directly to our national strength and preparedness by instruction in home hygiene and care of the ill or injured.

JOHN W. STUDEBAKER,
U. S. Commissioner of Education.



An important phase of the practical nurse's training is experience in caring for patients in the home.

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Group discussion of practical home problems looms large in home nursing courses in high schools.

The Need For Instruction

The Schools and Health Education

The health of our people is a great National asset. Not only does preventable illness represent a huge annual economic loss but it may be a potent factor in undermining national morale as well. We are facing an emergency. We have undertaken a gigantic national effort to marshal all of our resources of men and materials in order that we may be prepared for any eventuality in a troubled world. In our efforts to achieve total preparedness we must recognize as of primary importance the physical fitness of our citizenry. It is imperative, therefore, that we give consideration to the further measures which should be taken to conserve the health of our people.

Many individuals and agencies are now engaged in a concerted campaign against ill health, injury, and disease. None of these agencies has greater potentiality for rendering yeoman service than has the public-school system of the Nation. With its far-flung facilities, with its trained army of teachers, with its long experience in the most effective techniques of teaching both youths and adults, the public schools hold a strategic sector on the battle-front for health and physical fitness.

Since the beginning of the century health education has been a major objective of instruction in a steadily increasing number of schools and colleges. It has been part of a great public health movement directed toward the prevention of illness and injury on a national scale.

We are justly proud of the progress which this Nation has already made toward longer and healthier lives for its citizens. No nation has ever made greater progress in a similar period of time against the adversities of nature and the health hazards of communal life than have we. The educational forces of the country have made signal contributions to this progress.

Nevertheless much remains to be done. The burden of ill health and injury today is a serious national problem. Not all of this burden can be eliminated by health education. There are many related factors in a program for the improvement of public health. But health officials have insisted that the weight of this burden could be considerably lightened if the people generally could be taught how to think and act hygienically. Organized education is one of the Nation's most effective implements, fashioned and ready at hand to use for this purpose.

What People Should Think and Do About Health

Some of the things which people should be taught to think and do about their health are quite simply stated. They include:

I. Under Personal Hygiene

A. To develop in each person habitual recourse to:

1. Competent, prompt medical advice and care for:
   a. Illness, manifest or suspected
   b. Periodic health examination
2. Ability to discriminate between good and poor health advice

II. Under Community Hygiene

A. To develop in each person comprehension and appreciation of at least the fundamentals of:

1. Environmental sanitation:
   a. Water
   b. Foods
   c. Milk
   d. Waste disposal
2. Environmental safety:
   a. Safe roads, streets, homes, schools, and playgrounds
   b. Safe working and living conditions, e. g. light, ventilation, temperature, freedom from hazards, harmful dusts, fumes, gases

3. Contagious disease control:
   (a) Finding and isolating the case or carrier
   (b) Finding and isolating the contact
   (c) Control of animal and parasite reservoirs in certain regions
4. Adequate health facilities:
   (a) Health departments
   (b) Competent medical care
   (c) Hospitals, sanatoriums, clinics

The Schools Have a Responsibility

Let us frankly admit that health education is not the exclusive business of school teachers nor is health education entirely confined to the schools. But by all the advantages of tradition, experience, organization, and sensitivity to human need, the schools stand high among all those public agencies in position to conduct an effective health education program.

In spite of the growing awareness of their responsibility by the public schools in providing for the health needs of students, it is nevertheless necessary to note the inertia which must even yet be overcome if the schools are to make their proper contribution to the conservation of our national health. This inertia is not entirely the fault of teachers or administrators. Financial aid with which to provide needed facilities and assistance for broader programs of health instruction in the schools has been slow in coming. Nevertheless, it is possible for many more schools, without waiting for special aid, to make a greater contribution. Curriculum adaptations which will place health instruction on an equal basis with other subjects and will provide sufficient time, facilities, and supervision for the development of a successful instructional program could be immediately undertaken in many schools.

Special Need for Instruction

It seems evident that for some time to come the great majority of the sick will continue to be cared for in their homes by relatives. Most families cannot afford to employ trained nurses except for acute illnesses and then for only relatively brief periods of time. Mild cases of illness, many chronic illnesses, and convalescent care require elementary knowledge of nursing upon the part of the intelligent homemaker. *Our first line of defense*, therefore, in the conservation of our resources of health and physical vitality must be the women and girls of the country, trained in the elementary principles of home nursing.

Members of the nursing profession recognize the necessity of such training.

"Nursing is one of the oldest of the arts and came into being as a response to human need common to every family, the need for care in times of physical dependency and illness. Nursing has been and still is an integral part of family life; its practice, therefore, cannot be sharply limited to any group or groups within the community. At present *the vast majority of cases of minor illness are cared for* in the home by persons having no professional training. Even when severe illness necessitates the employment of a professional nurse she is usually dispensed with as soon as possible for economic reasons and the care of the patient during convalescence reverts to members of the household or to a non-professional worker. . . . The very fact that nursing the sick is still looked upon as one of the normal functions of women in households makes the definition of professional nursing service difficult. *It is not easy to draw a sharp dividing line between professional and non-professional nursing activities. They shade off into each other by a process of overlapping which seriously complicates the precise definition in terms of legal enactments of the functions which are or should be the prerogative of professional nurses.*" [1]

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[1] Goldmark, Josephine, R. N. and Pfefferkorn, Blanche, R. N. An Activity Analysis of Nursing. Prepared under the auspices of the Committee on the Grading of Nursing Schools, 1934.

The argument for a much wider extension of courses of instruction in Home Nursing rests upon the assumption that it is desirable to teach people to do better the things they will have to do anyway to meet the exigencies of human living. If this assumption is valid, then it follows that such instruction ought to be an important part of the general education of most American girls and women. The more widespread instruction of girls and women in this field should provide trained women who not only are competent to care for minor illnesses in their homes but who can also be drawn upon to undertake more specialized and intensive courses preparing for employment either as paid or voluntary subsidiary workers in the care of the ill or injured.

Extent of Instruction at Present

The American Red Cross has pioneered in the promotion and organization of courses of instruction in *Home Hygiene and Care of the Sick*, publishing their first textbook under this title in 1913. The instruction which the Red Cross gave to thousands of women and girls in the intervening years bore rich fruit in the days of the first World War, especially in 1918 during the epidemic of influenza. Following the war a number of public-school administrators introduced similar courses into the high schools. In some instances they were offered as separately organized courses taught by school nurses; in other cases they were organized as definite units of instruction in home economics courses, taught in most cases by the home economics teachers, although in some instances by American Red Cross nurses.

The adoption of such courses of instruction needs to be greatly extended in our high schools. There are in this country more than 25,000 public high schools enrolling nearly 7,000,000 pupils. Almost 70 percent of the Nation's 14 to 17-year-olds are in school. In 1933–34 reports to the U. S. Office of Education indicated that only 8,642 pupils were enrolled in courses titled *Home Nursing* or *Home Hygiene*. In addition, figures secured in 1938 show that about three-fourths of the high schools of the Nation offered home economics courses. A sampling study of all high schools indicated that approximately 10 percent of these courses included a 5 to 6 weeks' unit of instruction in home care of the sick, enrolling an estimated 140,000 girls. Home hygiene and home nursing courses in evening classes for adult homemakers enrolled an estimated 7,000 women in 1939. Last year some 35,000 school pupils were enrolled in Red Cross courses in *Home Hygiene and Care of the Sick* taught by Red Cross nurses.

A Challenge to the Schools

Including all forms of instruction mentioned, it may be conservatively estimated that there is an enrollment of fewer than 250,000 persons in organized courses of instruction in any year. Probably less than one-fourth of the total enrollment of girls in American high schools receive definitely organized instruction in this important area of life activity. From these data it seems clear that one distinctly important contribution which the public schools can make to the conservation of the health assets of the Nation, and hence to national defense, is the more general requirement of instruction in home hygiene and care of the ill or injured, of *all* girls in the high schools.



Practice makes perfect—high-school girls demonstrate making the patient's bed.

Brief Descriptions of Selected Courses

A Required Course for Girls in Des Moines, Iowa

Since about 1923 a course of study in *Home Hygiene and Care of the Sick* has been required of all ninth-grade girls in the secondary schools of Des Moines, Iowa. In each junior high school the subject is taught by a school nurse who devotes half time to classroom instruction and half time to her school nursing duties. Classes of girls are scheduled to meet throughout the year on alternate days with physical-education classes. The home-hygiene classes meet in a specially designed room adjacent to the nurse's office which is equipped with beds and other practical teaching aids. It may be noted in passing that in Des Moines ninth-grade boys also receive instruction in a parallel course dealing with *Personal Hygiene and First Aid*.

Des Moines Public Schools Outline for a Course in Home and Child Hygiene

The following outline of course content is planned for use with a two-volume manual entitled *Taking Care of the Family's Health* by Rood and Lingham. The outline is intended only to indicate the general scope of the course. In placing emphasis upon the various course topics, the teacher is governed by a study of the interests and needs of the pupils of her several classes.

General Objectives of the Course

1. To develop in the student an interest in and a knowledge of positive health (mental and physical) and a desire to build those personal habits that will safeguard health.
2. To develop an intelligent understanding and an attitude of interest and cooperation in the solving of family health problems.
3. To give a better understanding of the laws of health and their practical applications.
4. To give an understanding of the effects of environment on physical and mental health and to build up the desire to cooperate with health authorities for the improvement of home and community life.

General Abilities for Students to Develop

1. To increase the ability of the student to conserve and improve her own health.
2. To develop the ability to recognize deviations from normal states of health.
3. To meet simple illnesses and home emergencies with safety and efficiency.
4. To gain a practical knowledge of simple nursing procedures for care of the sick in the home.
5. To have an understanding of sanitary measures for home and community.
6. To know simple principles of infant and child care.

First Semester

Unit I—Personal Hygiene

1. Overview of the field
2. Heredity
3. Mental hygiene
4. Colds
5. Clothing
6. Foot hygiene
7. Cleanliness
8. Menstruation
9. Posture
10. Nutrition
11. Dental hygiene

Unit II—Home Hygiene

1. Meaning of family life
2. Choosing a home
3. Minimum essentials of a livable home
4. Care of the home
5. Equipment of the home
6. Community aids to home life

Unit III—Care of the Sick

1. Symptoms of illness
2. Selection of a room
3. Home attendant
4. Bed making
5. Baths
6. Special equipment
7. Treatments
8. Feeding the sick
9. Medicines and the medicine chest
10. Care of the convalescent

Texts and References

Delano: Home Hygiene and Care of the Sick (American Red Cross)

Crisp: Be Healthy

Andress, Adlinger, Goldberger: Health Essentials

Other books and pamphlets, varying with the needs of different schools.

SECOND SEMESTER

Unit IV—Communicable Diseases

1. Tuberculosis and other diseases
2. Immunizations and other preventive measures
3. Isolation and quarantine
4. Community controls
5. Sanitary measures for controlling food water, wastes, etc.

Unit V—Infant Care

1. Heredity and environment
2. Qualifications for parenthood: the right to be well born
3. Prenatal care
4. Baby equipment
5. Baby bath
6. Feeding the baby
7. Medical supervision
8. Normal growth and development
9. Habit training

Unit VI—Care of the Pre-school Child

1. Feeding
2. Clothing
3. Selection of toys and play environment
4. Normal growth and development
5. Habit training

Unit VII—Elective

1. First aid
2. Anatomy and physiology
3. Additional material on any of the above units
4. Caring for children in other people's homes

Texts and References

Delano: Home Hygiene and Care of the Sick (American Red Cross)

Crisp: Be Healthy

Andress, Adlinger, Goldberger: Health Essentials

Other books and pamphlets, varying with the needs of different schools.

Home Hygiene Teaching in Small Rural High Schools

Small rural high schools which find it difficult or impossible to provide such a course as that just described for Des Moines, may, nevertheless, make provision for the American Red Cross Course to be taught by an authorized local Red Cross nurse. This course is based upon a carefully prepared teacher's manual and textbook [1] and provides excellent material for a minimum of 30 clock hours of instruction. Necessary equipment can frequently be obtained through the Parent-Teacher Association, the Red Cross, or a local club. A cooperative plan of presenting the work in which the home economics teacher and the Red Cross nurse teach those parts of the course for which each is especially qualified has much to recommend it.

Home Hygiene as a Unit in Home Economics Courses

Home Hygiene and Care of the Ill or Injured is most frequently to be found as a unit of instruction in elective home economics courses for high-school girls. This arrange-

[1] American Red Cross Guide for Instructors in Home Hygiene and Care of the Sick. Textbook on Home Hygiene and Care of the Sick. Jane A. Delano. Philadelphia, P. Blakiston's Son & Co.

ment has obvious advantages and disadvantages. Some elementary knowledge of home hygiene and nursing is properly an integral part of the training of the intelligent homemaker. A well-equipped foods laboratory and homemaking department is to be found in more than half of the high schools, large or small, of the Nation. In these schools instruction in home hygiene under trained home economists, especially when coupled with *practical home projects under the supervision of a teacher who is concerned with translating learning into doing*, is likely to be qualitatively superior to that of home hygiene instruction in some other departments. The disadvantage appears to lie chiefly in the failure of many high-school girls to elect a complete home economics curriculum. Hence, many girls fail to receive instruction in the unit. Other disadvantages are the scant time allotted to home nursing in many home economics courses and the frequent failure to utilize the special skills and professional training of registered nurses for teaching certain parts of this work.

A Sample Unit From the Arizona State Course of Study

The illustration which follows centers upon elementary skills involved in the home care of the mildly or chronically sick patient, and emphasizes practical doing abilities:

Home Care of the Sick [1]

(2d Year, Semester 1)

Time allotment: 2–3 weeks

Major Objectives:

Realization of importance of being prepared to care for common diseases and handle emergencies in the home. Recognition of ways of providing conveniences for home care of the sick.

Understanding ways of protecting self and others against disease.

Understanding some of the best methods for caring for sick in the home.

Ability to plan and serve good meals for invalids.

Ability to administer *first aid* in some emergencies.

Using This Unit:

From a consideration of situations which are inevitable when someone is ill in the home, the girl should be better prepared to do her share in solving some of the many problems that arise when illness occurs.

This unit offers a greater variety of experiences than can be given in the two or three weeks suggested. It is expected that the teacher will determine with the group those aspects of home nursing which they will have most opportunity to put into practice, and include them.

In teaching this unit the teacher may find that the girls have many peculiar ideas on health and nursing and she will need to help the girls refer to authentic sources for answers to many questions.

Some desired outcomes	Suggested problems, activities, and experiences	Teaching aids
	A. Making the Patient Comfortable	
Recognition of some of the important needs of the home patient	There is illness in most every home at some time. What have you found are the needs when caring for persons who are ill in the home? Class lists such needs as: A comfortable bed A well-ventilated room Making it easy for patient to help himself Keeping patient happy Helping patient to eat	Selbert—*Home Care of the Sick*
Understanding ways of meeting some of the patient's needs	What have you seen done in order to meet these needs? Class suggests such ways as: Making the bed like a hospital bed Bathing the patient in bed	

[1] From: Course of Study in Homemaking For Secondary Schools—State of Arizona. Prepared by the Homemaking Service, State Department of Vocational Education, Phoenix, Ariz., 1938.

Some desired outcomes	Suggested problems, activities, and experiences	Teaching aids
	A. Making the Patient Comfortable—Continued.	
	Filling hot water bag so it is flat Giving a foot bath Caring for the hair, mouth, and teeth Keeping room well ventilated Arranging an attractive tray	
Ability to make a bed for a patient	Instructor or school nurse demonstrates making a bed, mitering the corners. The students practice making the bed with remainder of class offering suggestions where needed Making a bed with a patient (one of the girls) in it, is also demonstrated Giving the patient a bath and foot bath are demonstrated, then students practice on each other	American Red Cross—*Home Hygiene and Care of the Sick*
	Home Experience Making bed for sick person	
	B. Entertaining the Patient	
Ability to bring some cheer and happiness to the sick	A high-school girl who was ill for several weeks said the thoughtfulness of her friends as well as of her family helped her recover. Class tells how they think the things done for friends can help them to recover, as: Keeping them happy often hastens progress Planning for quiet and rest Students exchange experiences on doing things for the sick, as: Number of visitors allowed Length of visits Type of conversation Kind of books brought in Arrangement of flowers in room Planning entertainment for various ages	
	Home Experience Selecting some form of recreation for a sick person and entertaining them for a while Selecting suitable magazine articles and books for sick grandfather and reading to him	

Some desired outcomes	Suggested problems, activities, and experiences	Teaching aids
	C. Selecting, Arranging, and Caring for the Room	
Recognition of characteristics of a satisfactory "sick" room	If some member of your family were being brought from the hospital to be in bed at home for several weeks, what suggestions would you give for selecting, arranging and caring for the room? Class sets up standards for a satisfactory sick room, bringing out such points as: Pleasant exposure, quiet, and restful Fresh air and sunshine Temperature controlled if possible Well lighted Cheerful Easily cleaned Class members make suggestions regarding simple ways of reaching these standards, as: Shifting the bed to give a good view Covering lights that glare	Justin and Rust—*Home Living*
	Home Experience Selecting and arranging flowers for a sick room	
	D. Improvising Equipment for the Room	
Interest in improvising some simple equipment for the sick room	Since the average home does not have all of the utensils and supplies used in hospitals, how can substitutes be provided? Jane's mother had to take care of her father who has been ill for some time. Jane says that her mother does all of the added work without much extra fuss as she has a daily schedule for taking care of the patient. What part can Jane take in this routine? Students discuss such improvised equipment as: Washboard back rests Hoops to remove pressure of covers on some part of body Pillows for arm rests Homemade reading table Bedpocket made of newspapers *Home Experience* Improvising three pieces of equipment for the sick room	Olson—*Improvised Equipment*
	E. Working Out a Satisfactory Daily Routine	
Interest in a satisfactory daily routine	Students work out a daily routine such as: Greeting patient cheerfully	

Some desired outcomes	Suggested problems, activities, and experiences	Teaching aids
	E. Working Out a Satisfactory Daily Routine—Continued	
Understanding methods of taking temperature and pulse	Taking temperature, pulse (following doctor's orders) Caring for personal needs Caring for room Students practice taking pulse and temperature	
	F. Serving Food for the Sick	
	A mother who has been sick for several months says the doctor prescribes good food for her but it is never appetizing when her daughters serve it. What could be done to tempt her appetite?	Justin and Rust—*Home Living*
	Group makes a list of suggestions that could be made to these daughters for making food appetizing.	Kinyon and Hopkins—*Junior Home Problems*
Ability to arrange a tray attractively	Class suggests such aids as: Having food well seasoned Keeping the hot foods hot Serving the food attractively Not appearing hurried when serving food to the patient Having a definite time for meals Serving easily digested foods Students prepare trays for a patient who is not on any special diet and serve the trays [Note: If class interest and time allows, trays for patients having special diet needs may be prepared, as: Tray for tuberculosis or some other disorder.]	Selbert—*Home Care of the Sick*
	Home Experience Preparing trays for a sick person, trying to make them as attractive as possible Helping a convalescent sister learn to like the right kind of food	

Units in Ohio's Suggested Course of Study in Home Economics Which Relate to Home Hygiene

Well-rounded training for the intelligent homemaker involves much more than home hygiene and care of the ill or injured. Nevertheless, many of the units in a good modern home economics course have a rather direct bearing upon preparation for meeting health needs in home and family life. Thus an examination of one State course of study [3] outline for home economics shows the following units pertaining directly to home hygiene:

	Weeks
Foods and Nutrition	
Unit A. Maintaining personal health. Home Economics I	2–3
Unit F. Feeding small children. Home Economics II	2
Unit I. Providing adequate and satisfying diets for the family. Home Economics III	6
Unit M. Adapting the normal diet. Home Economics IV	2
Family and Other Social Relationships	
Unit B. Sharing in the care of children. Home Economics I	2–3
Unit G. Assuming responsibility for the care and guidance of children. Home Economics III	3–4
Unit J. Cooperating in solving of community problems affecting home and family life. Home Economics IV	2–3
Home Furnishing and Housing	
Unit B. Improving interior and exterior of the home (includes safety in the home and maintaining healthful home conditions)	4
Unit E. Providing satisfying housing for all families (relates to health). Home Economics IV	2
Home Management	
Unit G. Caring for the sick and giving first aid at home. Home Economics IV	3–4
Total	28–31

It has been estimated that less than one-fourth of the girls enrolled in our high schools study units definitely concerned with "home care of the sick." Nevertheless, a majority of American girls do receive *some* instruction in home economics in the high school. Most of them will have studied one or more units bearing more or less directly upon home hygiene and family health.

[3] A Course of Study for Home Economics. State Department of Education, Columbus, Ohio. 1939.



Food service with a smile helps cheer the invalid patient.

Some Vocational Aspects of Home Nursing

The Profession of Nursing

Many years of effort have gone into raising the standards for professional nursing and into safeguarding the public in the quality of nursing service. There should be no relaxing of these standards and safeguards. One of the important values of courses in home nursing in the general high schools is to give prospective homemakers an intelligent appreciation of the necessity of *trained* health personnel. Another value is vocational guidance as to the possibilities of nursing as a career. For those especially interested in vocational guidance for the nursing profession a brief list of references is given at the end of this publication. Suffice it here to point out that it requires at least 3 years of advanced specialized training and much varied experience under supervision to produce a competent professional nurse.

That the nursing profession is faced with difficult problems, among others the problem of economic security for nurses while maintaining high standards and rendering efficient service to the public, the following statement makes clear:[1]

"Every profession is faced by the problem of how it can render efficient service to society and maintain high standards for its members. Although nursing has made an extremely valuable contribution to our social life through the improvement of hospital conditions, the providing of a trained personnel to care for the sick, and a growing interest in the prevention of disease, it still falls far short, partly for reasons outside itself, of accomplishing much that society needs to have done, and that would give the nurse herself more in the way of a rich and successful life.

"A large part of the public fails to obtain competent nursing service at the time and place necessary. The person who has the misfortune of finding himself sick in the more remote rural areas may be totally unable to procure a graduate nurse or only after long delay. Even though he lives in a city whose nursing registries have long waiting lists, he may not succeed in securing one able to care for him efficiently in his home. . . .

"And finally the most insurmountable obstacle of all is that of the patient's obtaining service at a fee that he is able to pay. If he belongs to a small wealthy class no problem exists. If he is a member of the low-income group and is in need of dispensary service, hospitalization, or public health nursing, care will frequently be provided free of charge but it may be inadequate both in quality and in quantity. If he is a member of the middle class, his income has often been insufficient to permit him to set aside sums for unusual emergencies and he finds few plans for prepayment of service available to him. Consequently if sickness befalls him suddenly he is faced with the alternative of foregoing the nursing care that he needs or of involving himself and his family in serious financial difficulties from which it may take months or even years to recover."

Subsidiary Workers in the Care of the Sick

The 1930 Census reported a total of 153,433 untrained persons as practicing nursing in this country; 294,268 persons practicing as trained nurses. The depression years brought nursing registries with long waiting lists of professional nurses. During the same time there appears to have been a marked increase in the number of nonprofessional workers in the care of the sick.

These subsidiary workers in the care of the sick (i. e. persons other than graduate registered nurses, such as so-called "practical nurses", attendants, trained attendants, licensed attendants, licensed undergraduate nurses, licensed practical nurses, ward help-

[1] Brown, Esther Lucile. Nursing as a Profession. Russell Sage Foundation, 1936, pp. 105-106.

ers and orderlies, nurses' aides, nursing attendants, etc.) have been the subject of earnest study by a Joint Committee of American Nurses Association, National League of Nursing Education, and Natural Organization for Public Health Nursing. The results of this study are worthy of careful consideration by any public school or private training agency contemplating vocational training for nursing attendants.[2]

The standards and safeguards which this study recommends should prove of vital importance at this time when various agencies and organizations, public and private, are canvassing possibilities of usefulness in the national defense. It appears that there is some probability of a rapidly increasing demand for medical and professional nursing service in connection with expansion of our industrial and military establishments. Thus the National Director of Nursing Service for the American Red Cross in recently announcing a new project to train volunteer nurses' assistants as a part of its national defense plan, called attention to the fact that the U. S. Army is calling 4,000 Red Cross nurses to active duty before next July 1 and urged all of the Nation's nurses to enroll in the Red Cross reserves at the first possible moment.

According to the editors of *The American Journal of Nursing*:

> Hospitals increased their capacity 21.5 percent between 1930 and 1938.
>
> Nurses in federal service increased over 20 percent between 1930 and 1938.
>
> Public health nursing increased 21.8 percent between 1931 and 1938.
>
> Employment of general staff nurses in general hospitals having nursing schools increased 33 percent.
>
> The population of the country has increased 7 percent between 1930 and 1940.

BUT

The number of professional nurses has not increased. The graduating classes of 1935, 1936, 1937, and 1938 were approximately the same number as those graduated in 1928 and 1929.[3]

Careful scrutiny should be given to all proposals for training subsidiary workers in the care of the sick, in order to insure that they provide adequate safeguards for the workers and the public in the matter of employment prospects and training standards. So important is this matter of standards that permission has been secured to reprint here excerpts from the report of the three nursing organizations upon this subject.

Preparation of Subsidiary Workers

The Joint Boards of Directors of the three National Nursing Organizations have gone on record as stating that:[4]

1. In their opinion it is the responsibility of the nursing profession to outline the principles and policies for the control of subsidiary workers in the care of the sick.
2. They favor the state licensing of all those who nurse for hire.
3. No formal courses for the preparation of subsidiary workers should be encouraged until such time as a method for the control of their practice is devised.

A. Aim of the Course

To prepare qualified individuals to help meet community needs in assisting with the care of the sick in the home where preparation and skill of a registered nurse is not required for continuous service as determined by the physician.

B. Objectives

1. To give the student information and a working knowledge of—
   (a) The principles and practices of good housekeeping

[2] *Subsidiary Workers in the Care of the Sick*—Report of the Joint Committee to Outline Principles and Policies for the Control of Subsidiary Workers in the Care of the Sick. American Nurses Association, 50 West 50th Street, New York, N. Y., 1940.

[3] Nursing Emergencies. *The American Journal of Nursing*, September 1940, p. 1015.

[4] Excerpt from *Subsidiary Workers in the Care of the Sick*, pp. 5–7.

(b) The selection, preparation, and care of food
(c) Care of well children and infants
(d) Care of the mildly ill, chronic, convalescent, handicapped, or aged persons who do not require the expert, full-time service of a registered nurse, or to assist with the care of more severely ill patients under the supervision of a registered nurse

2. To give the student a definite realization of the extent of the field, and her responsibility in relation to the family, physician, registered nurse, or a home economics supervisor, the agency, and the community.

C. Initiation of Programs

1. Courses should not be established in an area unless survey or study demonstrates the need for such workers in that area.
2. Minimum requirements for establishing these programs should be:
   (a) A qualified director
   (b) Adequate supervision
   (c) Proper physical facilities
   (d) A practice field
   (e) An advisory committee representing lay and professional groups
   (f) Adequate support both by financial and community interests
3. Provision for the establishment and conduct of such courses should be made in the statutes of the States and the accrediting of such courses should rest with the body responsible for the accreditation of schools of nursing.

D. Personnel

The course director should be a registered nurse, graduated from an accredited school of nursing, with administrative and teaching ability and preparation. She should have had experience in nursing sickness in the home and it is desirable that she shall have had public health nursing experience.

The classes in foods and home management should be conducted by a home economist who is a graduate of a 4-year course in an accredited school in home economics, and who has had some experience in home problems.

E. Practice Field and Supervision

The students' practice should be under the guidance of the course director, and very closely supervised in all practice fields. She may be assisted in home supervision by properly qualified nurses from the visiting nurse association or a nurses' professional registry. Supervision should be shared with the home economist.

The students' practice field may be set up under the direction of a visiting nurse association or a nurses' professional registry where actual experience in the care of patients in the home may be given. Additional experience may be secured in hospitals, or divisions of hospitals, which do not admit acutely ill patients and neither conduct accredited schools of nursing nor offer affiliations for students enrolled in such schools. This experience may be secured in hospitals which include the care of chronic and convalescent patients, in homes for aged, orphanages, maternity homes, and day nurseries.

F. Minimum Qualifications for Applicants

1. Age—20 years of age or older.
2. Legal status—citizenship in the United States or legal declaration of becoming a citizen.
3. Education—for the present applicants under 25 years of age should have completed 2 years of high school or its equivalent. Applicants over 25 years of age should have completed at least the eighth grade or its equivalent.
4. Health—applicants should be required to have at their own expense a physical

examination, including an X-ray of the lungs, a test for syphilis, successful vaccination against smallpox (within last 5 years), immunization against typhoid fever, diphtheria, and should be in good physical condition.

5. Personality—references as to good character, personality, emotional stability, and ability to get along with other people should be secured. A suitable background of experience in the home should be required. A personal interview with the applicant is essential before acceptance.

G. Suggested Course of Study [1]

1. It is suggested that the length of the course be 6 to 9 months.
2. The hospital and home experience should be confined to the care of convalescent, chronic, and mildly ill patients, and of maternity patients after normal delivery.

H. Division of Time

2 months devoted to classroom instruction
1–3 months in the home
1–3 months in homes caring for mildly ill, chronic, and convalescent patients
2 months in care of well children

Theory and Classroom Practice. (To be given in the first month and concurrently with correlated practice.)

200 clock hours of classroom work to be divided as follows:

	Hours
Care of self	8
Behavior and working relationships	8
Housekeeping	30
Food and cooking	45
Elementary home care of the sick	90
Care of the mother and newborn infant after normal delivery	8
Care of children	5
Care of convalescent, chronic, and aged patients	6
Total	200

[1] Adapted from the *Tentative Course of Study and Practice for the Guidance of Schools for the Training of Practical Nurses*, prepared by the State Board of Nurse Examiners, Department of Education, New York State.

Adults Can and Do Learn

Federal funds for vocational education, available under the Smith-Hughes and George-Deen Acts, are now used in a number of States to assist in the reimbursement of day, part-time, and evening classes in home nursing for adults. Extension classes in Chemistry for Nurses and Dietetics for Nurses are sometimes organized under public-school auspices for nurses in hospital training. Again, classes in home nursing are organized in the States for the up-grading of so-called "practical nurses." Short unit evening courses for adult homemakers are frequently offered under such titles as: Home Care of the Sick, Safety and First Aid in the Home, Invalid Cookery, Child Care and Training. Although exact figures upon the number of adults enrolled in such public-school classes are difficult to obtain, reliable estimates would seem to indicate that more than 10,000 adults each year pursue one or another of the above-mentioned courses.

Training Nursing Attendants in Vocational High Schools

Several vocational schools receiving Federal aid under the Smith-Hughes and George-Deen Acts have been engaged for some years in giving day preparatory courses for training nursing attendants (or so-called "practical nurses"), under arrangements which properly seek to safeguard the interests of all parties: The employing public, the trainees, and the nursing profession. These schools and classes are administered, controlled, and supervised in all details by officials on the staff of a State or local board responsible for vocational education, who in setting up training courses for attendants secure the advice and assistance of an Advisory Committee upon which the medical and nursing professions and the public are represented. At a meeting of the Advisory Council of the National League of Nursing Education in 1938, Isabel M. Stewart, R. N., Chairman of the League Committee on Curriculum,

urged that plans be worked out for the active cooperation of State Leagues of Nursing Education with State Departments of Vocational Education which are conducting training programs for subsidiary workers.[6]

The general characteristics of present vocational training courses for nursing attendants in public schools are indicated by the following excerpts from a Michigan bulletin.[7]

Training Home Nursing Aides in Michigan

The first training center for home nursing aides was established in Detroit in September 1937, by the Detroit Board of Education and the State Board of Control for Vocational Education. The Detroit training center also has the active cooperation of the Detroit Council on Community Nursing which is responsible for the house used as a training center, its equipment, and operating expenses. The Detroit Community Fund provides money for these expenses. . . .

The training program for home nursing aides covers three areas of instruction including eight unit courses organized according to the demands of employers and the needs of the worker. The courses provide the worker with a knowledge of procedures as well as a sufficient degree of skill necessary for employment. The courses are arranged in suitable sequence to allow workers to satisfy needs for immediate or continued employment or adjustment. . . .

Plan A—Preparing Home Nursing Aides

The purpose of this course is to give preliminary training in the home nursing field to persons 17 years of age or over who have chosen this occupation and desire to become skilled workers in it. The program is for persons who have left the regular full-time school and who wish to take intensive training preparing them for employment as home nursing aides. The program is also for persons who are unemployed or employed in an occupation unsuited to them and who wish to prepare for new employment in the home nursing field.

This program is called "part-time preparatory" training and covers a minimum period of 18 weeks, 5 days per week, 6 hours per day—a total of 540 clock hours. During this 18-weeks' period the students are required to complete the minimum of 8 unit courses described below. Under this plan the classes must be held during the day time. This course also requires at least 6 months of experience in employment under supervision.

Plan B—Improving Home Nursing Aides

This plan provides a training program for those persons 17 years of age or over who have had previous experience in home nursing aide employment and who wish to return to school during the day or in the evening for the purpose of extending their knowledge and skill in the line of their employment. This type of school or class is called "part-time extension" training and is open to employed and unemployed persons. Such classes must meet a minimum of 4 hours each week at any time during the day or evening. The unit courses described below indicate the scope and the total minimum time required under this plan. The outline of the unit courses herein is a guide for the order in which the courses should be offered. In many cases it may be more convenient to change the order in which they appear. Regardless of the order in which the unit courses are given the unit name and number should be retained. As soon as one unit course has been completed another unit should be started. The various unit courses may be conducted concurrently if the number of trainees justifies such an arrangement. The personnel of the group for each unit

[6] As reported in *The American Journal of Nursing*, June 1938, p. 695.

[7] Home Nursing Aides, Vocational Training Program. Bulletin 258, issued by the State Board of Control for Vocational Education, Trade and Industrial and Home Economics Education Divisions, Lansing, Mich., 1938. Approved by State Advisory Committee on Training for Home Nursing Aides.

course should be practically the same, but new students may enter at any time a new unit course begins. If the program is large enough to justify it several unit courses may run parallel.

Areas of Instruction and Scope of Teaching Units

The course listed herein is organized on a short unit basis and each unit is complete within itself. Each unit may be taught separately but it is desirable that all units be completed before a worker is placed in employment. The hours per week indicated below are minimum:

AREA A: Personal Problems and Working Relationships—4 hours per week

Unit 1: Personal and Social Problems—1 hour per week

A. Personal
   1. Definition of the home nursing aide
   2. Qualifications of the home nursing aide
   3. Personal improvement and hygiene

B. Social
   1. Family members
   2. Community

Unit 2: Ethics for the Home Nursing Aide—3 hours per week

A. Duties and relationships to—
   1. The family (employer and employee)
   2. The patient
   3. The doctor
   4. The supervisory nurse

AREA B: Nursing Procedures and Applied Practices—18 hours per week

Unit 3: General Nursing Practices—7 hours per week

A. Relation of disabilities to anatomy and physiology
   1. In disease
      (a) Common diseases
      (b) Limitations to the home nursing aide
   2. In injuries
      (a) Meeting common emergencies
      (b) First aid

B. Nursing care of the patient
   1. The sick room, bed-making, care of the bed
   2. Daily personal care of the patient
   3. Comforts for the patient in bed; improvised equipment
   4. Protections against spread of infection
   5. Carrying out the doctor's orders for simple treatments
   6. Special nursing care in relation to the convalescent, chronic, aged

Unit 4: Nutrition Needs and Special Diets for the Sick—2 hours per week

A. Planning, preparation, demonstration, and practice in serving—
   1. Normal diets for the sick
   2. Special diets for the sick

B. Feeding the patient

Unit 5: Special Problems of Patients—6 hours per week

A. Activities of the patient
   1. Handicrafts
   2. Entertainment

B. Personal adjustments (rebuilding morale)

C. Nursing activities in relation to the convalescents, chronic, and aged in—
   1. Assisting to walk
   2. Assisting to wheel chairs
   3. Fulfilling special desires

Unit 6: Maternity and Infant Care—3 hours per week

A. Prenatal care
B. Maternity care
C. Infant care

AREA C: Home Management and Family Problems—10 hours per week

Unit 7: Management and Care of the Home—8 hours per week

A. Care of the home
B. Management

C. Family meals, including proper food for children
D. Clothing care and laundry problems
E. Emergencies

Unit 8: Child Development and Family Problems—2 hours per week
A. Physical care of the child
B. Emotional and social development of the child
C. Family relationships to the child or children

Facilities for Giving Instruction

The plant and equipment in rooms and laboratories should, insofar as possible, be a replica of the actual working environment of the home nursing aide. The instruction under each course should be given in rooms and laboratories equipped to provide actual work experiences. It would be desirable to have the teaching center represent the situation in which the home nursing aide would work. To this extent, it would be advisable to secure a house and furnish it as a normal home which would provide all the work stations where a worker would perform activity. Vacant houses may be secured by local organizations and furnished on a cooperative basis. Also, furnished homes may be leased or loaned to the organization conducting the program. This is often done as owners are glad to have the house and its furnishings cared for properly.

Qualifications of Teachers

Persons selected to teach home nursing aide courses must have sufficient training and experience in this field to insure an efficient course of instruction. The qualifications of such teachers must be approved by the local director of vocational education or the superintendent of schools, and the State Director of Vocational Education. Teachers for the nursing units must be registered nurses, graduates of schools of nursing of approved standards, with at least a high-school education as a background. The homemaking units should be taught by persons trained in home economics. Where the candidates for teaching those units other than nursing units have satisfactory professional and personal qualifications although not graduates in the fields indicated, they may be employed at the discretion of the local and State officials. A special certificate of approval for a year will be issued to persons who do not hold vocational certificates.

Local Advisory Committees

Advisory committees comprised of representatives of employers, nurses' associations, medical associations, community fund, and other organizations are very helpful to local and State school authorities upon such matters as the need for training home nursing aides, where trainees should be trained, the number to be trained, adaptation of courses for local need, standards of performance, and other matters. A representative of the home nursing center should be a member of all local committees. Committees should be appointed by the superintendent of schools with the advice and counsel of the director of the training school.

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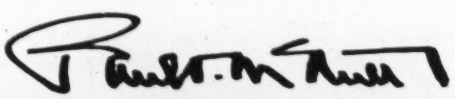
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FEDERAL SECURITY AGENCY

WASHINGTON

EDUCATIONAL POLICIES FOR SCHOOLS AND COLLEGES
IN RELATION TO NATIONAL DEFENSE

It is of vital importance to safeguard American education in schools and colleges against needless interruptions and conflicting appeals from Government agencies for service in the national interest. It is likewise exceedingly important that Governmental policies affecting schools and colleges should be developed in accordance with practical possibilities for service by educational agencies and institutions and should be so coordinated as to secure the largest possible contribution to national welfare. In keeping with the general policy of the National Defense Commission to expect appropriate Government agencies to carry the responsibility for the programs which naturally fall within their respective fields, it is to be understood that the United States Commissioner of Education is recognized as the proper Government official to be responsible for the coordination of educational policies for schools and colleges in relation to problems of national defense. He will serve, as usual, under the general supervision of the Administrator of the Federal Security Agency and will recommend through the Administrator to the Defense Commission such policies affecting schools and colleges as in his judgment or in the opinion of interested educational groups are considered to be of sufficient importance to be brought to the attention of the Commission. It is also to be understood that other Government agencies desiring to enlist the service of schools and colleges should associate themselves with the Office of Education in such ways as to make most effective the coordinating service of that Office. Acting under the supervision of the Administrator of the Federal Security Agency, the Commissioner of Education will be expected to assume the responsibility for the administration of policies of the Defense Commission involving the cooperation of schools and colleges.



Administrator

Sept. 13, 1940
Date

U. S. Office of Education Planning Committee on General Problems of Education and National Defense

JOHN W. STUDEBAKER—*Chairman*
Commissioner of Education

BESS GOODYKOONTZ
Assistant Commissioner of Education
Liaison with Office of Commissioner of Consumer Protection, Defense Commission
Administers Information Exchange on Education and Defense

J. C. WRIGHT
Assistant Commissioner for Vocational Education
Administers training programs in trade schools, for rural and nonfarm youth, and for NYA project workers

C. F. KLINEFELTER
Assistant to the Commissioner
Liaison with Office of Commissioner of Labor Supply, Defense Commission

HENRY F. ALVES
Senior Specialist in State School Administration
Liaison with Divisions of State Relationships and Housing, Defense Commission

W. D. BOUTWELL
Director of Information

Subcommittee on Special Publications

(To plan and review a special series of pamphlets on Education and National Defense)

BESS GOODYKOONTZ—*Chairman*
OLGA A. JONES—*Secretary*
WILLIAM D. BOUTWELL
MRS. KATHERINE M. COOK
RALPH M. DUNBAR
RALL I. GRIGSBY
CARL A. JESSEN
FRED J. KELLY
HELEN K. MACKINTOSH
ELISE H. MARTENS
G. M. ROCH
CHESTER S. WILLIAMS

FRANCIS G. CORNELL
Director Defense Training Statistical and Research Service
Liaison with Research Division of Defense Commission and with Labor Supply Commissioner's Office respecting training programs

RALL I. GRIGSBY
Acting as Special Assistant to the Commissioner

CARL A. JESSEN
Senior Specialist in Secondary Education

OLGA A. JONES
Editor in Chief

FRED J. KELLY
Chief, Division of Higher Education
Administers training program in engineering colleges

HELEN K. MACKINTOSH
Senior Specialist in Elementary Education

HOWARD W. OXLEY
Director, CCC Camp Education Division

CHESTER S. WILLIAMS
Director, Division of Forums and Adult Education

Subcommittee on Miscellaneous Proposals

(To receive and consider various proposals, usually from outside the Office, and to report to the Commissioner of Education)

R. I. GRIGSBY—*Chairman*
C. S. WILLIAMS—*Secretary*
H. F. ALVES
R. V. BULLINGTON
WALTER H. GAUMNITZ
CARL A. JESSEN
JOHN LUND
HELEN K. MACKINTOSH
ELISE H. MARTENS

TRAINING SCHOOL FOR MILL OPERATIVES
(Textile Bulletin, April 1, 1941)

On page 28 will be found a copy of an act passed by the Legislature of North Carolina during the closing days of the session which recently adjourned.

The act provides $50,000 for the establishment of a training school for persons who wish to secure employment in textile mills and is intended to overcome difficulties which have resulted from the learner provisions of the Wages and Hours Law.

After the plant is established, it is to be operated under the Vocational Educational Department of the Federal Government.

The proposed school can be likened to the military training camp recently established at Spartanburg, S. C.

Draftees are to be sent to that camp and given three months of preliminary training before being sent to regular camps.

Persons who have no textile experience, but wish to secure employment in textile mills, will go to the Textile Training School and spend several weeks under the supervision of persons with special experience in training mill employees. Those who wish to be spinners will learn how to put up ends, put in roving, clean frames, etc., and be able to do reasonably good work when they enter the mills.

Instead of having to pay high wages, furnish instructors and suffer both bad work and waste from learners, mills can send them to the Textile Training School and pay for their room and meals while they obtain rudimentary knowledge.

While plans have not yet been completed, it is probably that a 2,000 spindle mill will be established in some vacant mill building. The mill will probably be equipped with reasonably good second hand machinery and will be complete including looms and cloth room machinery. There should also be knitting machinery.

While we can understand the desire of Chambers of Commerce, to obtain this Textile Training School for their city, we consider the project far too important to be sacrificed or handicapped in order to satisfy local pride.

We feel that it should be at some locality where weaving is a considerable function of the textile industry and where reasonably coarse yarns are spun. Even those who are to be trained for fine combed yarn mills can best receive their first experience on coarse yarns.

We are not interested in the school being located in any particular town, but do desire it to be located where it can render the greatest service to all branches of the textile industry of North Carolina.

FEDERAL SECURITY AGENCY
NATIONAL YOUTH ADMINISTRATION
2145 C STREET NW., WASHINGTON, D. C.

September 11, 1941

Miss Mary Robinson
Women's Bureau
Department of Labor
Washington, D. C.

Dear Miss Robinson:

The following are the approximate employment figures as of June 30, 1941 for girls in various types of defense activities:

Type of Production	Number of Youth
Total	14,332
Sheet Metal	545
Welding	197
Foundry	29
Automotive maintenance & repair	103
Aviation services	8
Machine shop	881
Electrical	55
Radio	293
Sewing-industrial type machine	12,221

Sincerely yours,

Marie D. Lane F

(Mrs.) Winthrop D. Lane, Chief
Service Projects Section

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

WASHINGTON

September 11, 1941

Miss Mary K. Morris,
U. S. Women's Bureau,
Washington, D. C.

Dear Miss Morris:

Enclosed is the memorandum on the training of women defense workers which you requested in your telephone conversation of September 10. I understand that Miss Anderson plans to use this material in a paper which she is preparing.

I am sending, also, some information about details of the Engineering, Science, and Management training courses open to women, a short report on aviation training for women, written by Mr. Robert W. Hambrook of this office, and a short statement on the opportunities for training offered to women in this emergency.

Yours very truly,

Louise Moore

Louise Moore,
Agent, Trade and Industrial
Education for Girls and Women.

TRAINING OFFERED FOR WOMEN DEFENSE WORKERS THROUGH STATE BOARDS OF VOCATIONAL EDUCATION AND THE UNIVERSITIES AND COLLEGES

(The cost of these courses is reimbursed by the Federal Government)

CLASSES OF COLLEGE GRADE

Women may enroll in classes in Engineering, Science, and Management in various colleges and universities which offer short courses for the training of defense workers in specific fields. The Federal Government pays for the training and the institution determines the eligibility of candidates. The courses are of varying length. Several hundred women have enrolled for training in such work as aeronautical, electrical, civil and industrial engineering; in engineering drawing and descriptive geometry; in machine design; in plastics and in explosives. Women obtain positions in various industries after they have completed their training.

COURSES OF LESS THAN COLLEGE GRADE

Interest in training courses for women defense workers has increased as the supply of suitable male workers has diminished. Enrollments are largest in classes in Pennsylvania, New Jersey, Connecticut, New York and Massachusetts. A number of women are enrolled in California, Kansas, and Missouri.

Among the courses taught are blueprint reading; inspection, both visual and with instruments; electrical assembly; aviation ignition coil winding; light sheet metal work; construction of wood frames for airplane wings; airplane riveting; parachute construction; heat treatment; spot welding; punch press work; drill press and lathe work; hand tapping; lens grinding and polishing; polishing of jewels for precision instruments; aviation mechanics. Trainees are given instruction in such related work as shop mathematics, elementary metallurgy, shop sketching and safety practices.

Instructors report that women trainees are of a very high type and that they vary considerably in age and in educational experience. Trainees are almost uniformly enthusiastic and intelligent. The instructor of one class said that the trainees insisted on eating a very quick lunch at noon and spending all the rest of the time with their work. When he returned from his lunch he always found that they had new questions to ask him. Women have shown particular aptitude in meeting exact trade standards. They were very proud of the quality of the article which they produced and when these articles were hand tools the women often bought them to keep as samples of their work. The quicker learners often helped the slower and many of the class developed a surprising esprit de corps. Some of the trainees are ready for work in less time than had been anticipated.

Both teachers and supervisors agreed that women were very apt pupils and that after they had had some actual experience in industry they became thoroughly satisfactory employees in the defense industries where they found places.

U.S. Office of Education

ENGINEERING, SCIENCE, AND MANAGEMENT DEFENSE TRAINING

PROGRAMS, As of May 31, 1941.

is largest
Enrollment of Women in Courses Offered in New York State, Pennsylvania, California, and in the District of Columbia.

As of May 31, 1941: 352 Women enrolled in all courses.

AERONAUTICAL

Fundamental Aeronautical Engineering - 7
Inspection and Testing - 2
Aircraft - 7
Structures - 3
Other - 5

BASIC SCIENCES

Mathematics - 2
Chemical Engineering Fundamentals - 9
Inspection and Testing - 2
Explosives - 9
Plastics - 3

CIVIL ENGINEERING

Structures - 1
Surveying and Mapping - 12

ELECTRICAL ENGINEERING

Fundamentals - 3
Electronics - 1
Communications - 2

GENERAL ENGINEERING

Engineering Drawing and Descriptive Geometry - 99
Spectroscopy - 2
Other - 2

INDUSTRIAL ENGINEERING

Industrial Management - 28
Production Engineering - 42
Production Supervision - 24

MARINE ENGINEERING AND NAVAL ARCHITECTURE

Hulls - 1

Mechanical Engineering

Machine Design - 5
Steam Power - 4
Other - 1

METALLURGICAL ENGINEERING

Fundamentals - 2
Metallurgy and Metallography - 7
Unclassified - 56

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

WASHINGTON

August 26, 1941

OPPORTUNITIES FOR TRAINING OFFERED TO WOMEN IN THE PRESENT EMERGENCY

The following training courses, some of which are financed in whole or in part by the Federal Government, are offered free to women of suitable age who are considered qualified to profit by the course offered.

Not all of the courses are available in any community. In some communities no courses are offered.

In no case are positions guaranteed to women completing the course.

Except in the coursesfor training nurses no provision is made for maintenance of trainees.

Trainees are not paid while learning.

Each of the training courses is locally supervised and maintained.

The Federal Government exercises no local direct authority.

COURSES LEADING TO EMPLOYMENT PAYING WAGES OR SALARY

Training for Productive Work, Usually in a Factory

You should call at the nearest branch of the Public Employment Service, register for work, and ask about training for defense workers. The Public Employment Service charges no fee. If you live in a city, you can find the address of the Public Employment Service in your telephone book. If you live in the country, or a small town, without a branch of the service, you can find the address by writing to: State Director, Public Employment Service, at the State Capital of your State.

You might profitably visit your nearest trade school or vocational school, asking about courses for women defense workers, or call at the Board of Education for this information.

You may write for information about courses for women defense workers to the State Director for Vocational Education at your State capital.

Training for Work in the Fields of Engineering, Science and Management

If you are prepared to do work of college grade, and are interested in the fields of engineering, science, or management, you may write to the office of the university or engineering college in your State, asking about defense courses in engineering, science and management.

You can obtain a complete list of institutions offering defense courses in engineering, science and management, and the courses in each, by writing to:

Engineering, Science and Management Defense Training,
U. S. Office of Education,
Federal Security Agency,
Washington, D. C.

Training in the Field of Professional Nursing.

If you are interested in becoming a professional nurse, you should write to the Board of Nurse Examiners, at the Capital of your State, asking for a list of accredited training schools for nurses and information about these schools, such as costs, entrance requirements, length of course, student loans, and scholarships. If you want some general information about the profession of nursing, write to:

National League of Nursing Education
1790 Broadway
New York, New York

The Federal Government does not pay for this training. The student is usually charged a fee by the institution for the training, which is about three years in length. Students are usually required to be high school graduates, between the ages of 18 and 35.

If you are an inactive graduate nurse, interested in "refresher courses" offered as an emergency measure, write for information about location of schools where "refresher courses" are authorized to the Board of Nurse Examiners at the Capital of your State. Some of these courses are given aid by the Federal Government. In addition, there are advanced courses, open to well qualified graduate nurses. Information regarding these may be obtained from the Board of Nurse Examiners at the Capital of your State.

Dietician.

No training for dieticians is offered by the Federal Government. If you are interested you may write to your State University or State College of Agriculture and Mechanic Arts, asking about courses for dieticians.

For general information write to the American Dietetic Association, 185 North Wabash Avenue, Chicago, Illinois. This Association will furnish lists of institutions offering courses accredited by the American Dietetic Association.

Civilian Pilot Training

The Federal Government no longer offers courses in Civilian Pilot Training which are open to women.

COURSES LEADING TO EMPLOYMENT AS A VOLUNTEER WORKER
(ONE WHO OFFERS SERVICES WITHOUT PAY)

Civilian Defense

You can get information from your local defense coordinator, who usually has an office in the City Hall, asking what courses in various phases of civilian defense are open to women.

If you live in the country, or in a small community, you should write to the State Council of Defense at the Capital of your State, asking the location of the nearest courses in civilian defense.

(Courses for citizens in civilian defense are paid for from local and State funds, not by the Federal Government.)

American Red Cross

The American Red Cross offers many courses for volunteers. The cost of this training is borne by the American Red Cross, and not by the Federal Government. Among the courses are the following: Disaster relief service; first aid; water safety and accident prevention; home nursing; nutrition; nurse aid, civilian and community relief.

You should inquire about courses at the nearest branch of the American Red Cross. In a city, you can find this address in the telephone book. If you live in a rural community, or a small town, you can find the location of your nearest chapter by writing to the American Red Cross, National Headquarters, Seventeenth and D Streets, NW., Washington, D. C.

POSITIONS IN THE FEDERAL GOVERNMENT

If you are interested in a position in one of the Federal Departments or Agencies, write to the U. S. Civil Service Commission, Washington, D. C., asking for a list of examinations to be given in the field of work for which you are prepared. The Commission will give you instructions about making application in the accepted form. You should not come to Washington until you have passed your examination and have received an appointment. The Federal Government pays for no courses preparing trainees for these positions.

The Federal offices concerned with the training program are as follows:

Training of less than college grade for defense workers:

Vocational Training for Defense Workers,
U. S. Office of Education,
Federal Security Agency,
Washington, D. C.

Training of college grade for defense workers:

Engineering, Science and Management Defense Training,
U. S. Office of Education
Federal Security Agency,
Washington, D. C.

Training in professional nursing fields:

States Relations Division,
U. S. Public Health Service,
Federal Security Agency,
Washington, D. C.

Training for civilian defense:

Office of Civilian Defense
Office of Emergency Management,
2000 Massachusetts Avenue, N. W.,
Washington, D. C.

NYA

Just 11 months of 1941
trained
134,781 women
264,334 men

Digest 1/7/42

Nov 1941

THE TRAINING OF NYA YOUNG WOMEN IN DEFENSE ACTIVITIES

Total 14,761

In the month of November, there were employed on our projects, getting training for direct defense industries, the following number of young women: machine shop 2,576, sheet metal 2,414, welding 663, foundry 72, forge and blacksmith 17, radio 795, electrical 204, automotive maintenance and repair 204, power sewing 7,816.

Young women were employed also for all types of service activities in shops, such as, maintenance of the tool crib, keeping of records, and other clerical work, and timekeeping. We plan further to initiate training in woodworking as related to the manufacture of airplanes and fabric work and upholstering for airplanes.

Many young women were also employed in the following activities, while although not direct defense are closely allied: drafting, mapmaking, screen printing and photography.

In the field of civil defense, a total of 13,278 young women were receiving training as hospital attendants, laboratory assistants, and public health and clinic workers; 14,005 were working in food production and school lunch programs. Wherever possible the emphasis in this work is placed in quantity cooking to prepare girls for work in emergency feeding if this should be required.

We have also many employees in military establishments. These include besides the hospital workers, many clerical and laundry workers.

(Prepared for IAS by Miss Grete M. Franke. State breakdown requested, but not received.)

NORTH CAROLINA ESTABLISHES TRAINING SCHOOL FOR TEXTILE EMPLOYEES
(Textile Bulletin, April 1, 1941)

Realising that the learner provisions of the Wages and Hours Law have made it difficult for textile mills to train those who come without previous textile experience, the Legislature of North Carolina made an appropriation for a training school.

The following is a copy of the act:

An act to authorise the Governor to allot funds from vocational educational appropriations for the purpose of establishing a textile training school in the Piedmont Section of North Carolina.

Whereas, the members of this General Assembly, having realised the great necessity of vocational training North Carolina; and

Whereas, opportunity now exists to train young men and women for life's vocation in the textile industry at a nominal expense; and

Whereas, the Piedmont Section of North Carolina is now the greatest textile center in the United States: Now, therefore,

The General Assembly of North Carolina do enact:

Sec. 1. That the Governor of North Carolina is hereby authorized to appoint a commission composed of seven persons, five of whom shall be experienced textile operators, and two selected at large as to qualifications described by the Governor. The said committee shall investigate the various cities of the Piedmont Section of North Carolina for the selection of a site to establish what will later be known as "North Carolina Textile Institute," or some appropriate name to be selected by the commission.

Sec. 2. The Governor of North Carolina shall be chairman of the above named commission, and the operation and administration of said institution shall be placed in the hands of the State Board for Vocational Education or such Board as it may appoint or designate as its representative in the administration of said institution.

Sec. 3. Persons eligible for attendance upon this institution shall be at least sixteen years of age and legal residents of the State of North Carolina. The institution shall teach the general principles and practices of the textile manufacturing and related subjects.

Sec. 4. The Governor of North Carolina and the Council of State may allocate a sum not to exceed fifty thousand ($50,000) dollars from the contingency and emergency fund or any other funds available for the purpose of erecting buildings for said institute, and the commission shall be authorised to accept the contributions of land and money from interested persons, and shall be authorised to lease and accept loans from machinery manufacturers for the operation of the plant. Vocational education funds appropriated to the State Board for Vocational Education by the General Assembly of North Carolina shall be used for instructional purposes in said institue, according to the rules and regulations governing the expenditure of State funds.

Sec. 5. All laws or parts of laws in conflict with the provisions of this act are hereby repealed.

Sec. 6. This act shall be in full force and effect from and after its ratification.

OFFICE OF PRODUCTION MANAGEMENT

Research
Training

Labor Division

Not to be released before 10 A.M.
Saturday, April 19, 1941

PM 286

Address by Miss Thelma McKelvey, Special Assistant, Labor Supply and Training Section, Labor Division, Office of Production Management, delivered before the State-Wide Conference called by the Indiana National Youth Administration on Training and Job Opportunities for Girls in Industry, attended by representatives from industry, vocational education and National Youth Administration officials.

WOMEN'S ROLE IN DEFENSE INDUSTRIES

I think I should first briefly outline the program of the Labor Supply and Training Section of the Labor Division of the Office of Production Management. In seeking to supply defense industries with a continuous flow of qualified labor, the human resources of the nation's man power have been surveyed for location and occupations, and there has been launched the largest training program ever attempted in this nation's history or indeed in the history of the world.

Labor Supply and Training, under the direction of Dr. Floyd W. Reeves, is working on the mobilization, training and placement of workers for defense industries. This is being done through a coordination of the activities of seven government agencies, namely: The United States Employment Service and its affiliated 1,500 State and local employment offices, the United States Civil Service Commission, the Federal Committee on Apprenticeship, the United States Office of Education and State and local boards of education, the National Youth Administration, the Work Projects Administration, and the Civilian Conservation Corps.

This defense training program was initiated on July 1 of last year and since that time about 816,000 have been enrolled or are currently enrolled in

preemployment refresher courses for the unemployed worker, supplementary courses for the employed worker, preemployment training courses for youth in small town and rural communities and training classes for NYA project workers. In addition, the National Youth Administration has been operating its work production shops to prepare young people through actual job training for the defense industries.

In order to be reasonably certain that training is related to the occupational needs of this enormous defense program, there was established early in the defense program, an approved list of defense industries. It is important that you know what these industries are because they will have direct relationship to my remarks on the training of women for defense occupations. These industries are:

> Aircraft Manufacturing, Maintenance and Repair; Machine Tools; Shipbuilding Maintenance and Repair; Automotive Manufacturing Maintenance and Repair; Electrical Manufacturing; Forging; Boiler and Heavy Steel Plate; Foundry; Ammunition; Light and Heavy Ordnance; Sheet Metal; Chemicals; Light Manufacturing; and Woodworking.

We have heard more about three defense industries than all the rest - aircraft, shipbuilding, and machine tools, for it is in these three industries that production delays would most seriously affect our defense progress. Consequently, a great deal of the emphasis in training has been directed toward meeting the labor requirements of these three defense industries. Aircraft is expected to employ 520,000 by October, 1941, an increase of 315,000 over October, 1940; the shipbuilding program by November, 1942, will need at least 388,000, as compared to an employment figure of 127,000 in November, 1940. The machine tool industry is expected to increase from 80,200 employed on January 1, 1941 to 102,800 at the end of this year. This increase of 22,600 will include 16,000 skilled workers, 4,000 semi-skilled and 2,600 unskilled.

The first task facing the country was to put back to work the nation's unemployed man power. A great deal of this man power has been unused during the depression years and many of their skills had grown rusty. For example, skilled workers were performing jobs as filling station attendants, clerks in stores, and taxi cab drivers. Directly related to this great reservoir of idle man power were the occupational requirements of defense industries which indicated that men were wanted - skilled and semi-skilled workers - machinists, turret lathe operators, grinders, tool makers, precision instrument makers, riveters, welders, and so on down the line.

As a very natural result of this demand for labor and in full realization of the future demands for labor, men had been given first consideration in the training program because it was men industry wanted and was asking for. To speed defense production and to meet the demands of essential personnel for this great expansion, the policy of the Labor Division has been to train for the jobs which were opening up and in accordance with the kinds of labor which the employer together with the union in most instances agreed upon were essential.

On behalf of the women of this country who always in times of great national emergency have been ready, eager, and able to assume their place in industrial production, I wish to make it clear that all studies which have been made indicate that women have been found satisfactory in virtually every kind of job ordinarily filled by men. It cannot be said categorically that any particular job is absolutely unsuitable for women. Past experience has shown that it is in times of labor shortage that women become in demand as production workers. As a more restricted labor market develops, the present tendency undoubtedly will be to utilize other sources of labor reserves, of which women are the largest, most acceptable source.

Three distinct phases evolve in respect to women in this expansion. In the first stage, increased buying power resulting from greater production and employment creates additional opportunities in occupations which have traditionally been held by women. These include sales, clerical and stenographic positions, as well as occupations in the needle trades and other consumer manufacturers. An example of the effects of this may be found in the present employment situation in Philadelphia. Of an estimated 168,000 workers to be added during the next year, 58,000 are expected to be women. A large share of these will be employed in clothing and food industries, and as sales or service workers. This condition is not limited to one section but is widespread, since the economic effects of defense activities, which are the motivating force of the general uptrend, are diffused through the country. This phase of general demand for workers appears to use primarily those individuals who are normally a part of the labor market. At the present time, it is reasonably clear that the country is well into this phase.

The second phase is accompanied by a rising wage level and an approaching or anticipated shortage of male labor. Light mass-production metal-working industries involving relatively simple, high-speed machine operation and assembly work, begin to employ women as men become scarce for jobs requiring dexterity, care and speed with a minimum of strength and craftsmanship. Women have proved very satisfactory and in some instances superior to men in such occupations. Industry in the United States is just entering this phase and it is not yet clear how far it will go in this direction.

The third phase of the cycle, the one in which Great Britain finds herself today, is that in which women enter jobs in trade, service, transportation and manufacturing that have customarily been held by men. This influx of women into industry releases men for heavier, more exacting factory work, or for

service in the armed forces. In this stage, women may even take over factory jobs that traditionally have been considered suitable only for men. As yet there is no evidence of the approach of this condition in this country. At most, it may be said to be only on the horizon, although there are scattered instances, principally in communities where shortages of male labor are threatened. A few such communities are encouraging the use of local women wherever possible, in order to avoid a large in-migration of men who may be left stranded and jobless with their families when the defence program is over.

According to recent reports to the Bureau of Employment Security, there is increasing evidence from many parts of the country of the employment of women in industrial occupations, especially in semi-skilled machine operations, light assembly work, and simple inspection and packing. Reports of this kind come from all parts of the country--from Kentucky, Massachusetts, California, Texas, Ohio, and other important States. Increasing work opportunities, coupled with intensive recruitment by employers, have attracted into the labor market many women who would not normally be a part of it.

In an Indiana community, the principal demand for radio assembly work is for girls 18 to 25 years old. All high school graduates are being interviewed and the local supply is reported to have been almost exhausted.

Relaxation of employers' specification as to marital status is widely reported, and in some areas special attention is being given to the solution of problems which will arise as a result of employment of married women. In Naugatuck, Connecticut, consideration is being given to the setting up of day nurseries for the care of children of married women returning to employment. In this connection, I should mention that in many places the employment of women is limited by laws forbidding their employment on night shifts.

In the first stages of our defense program, women found employment in shell loading plants on bag loading operations. Of some 4,400 workers to be added by the Goodyear Bag Loading Plant at Charlestown, Indiana, 70 percent will be women. Women are being used widely in packing, assembly and inspection. They are being hired, not only as stitchers and on light machines but as punch and drill press operators and power sewing machine operators. They may be found not only in textile mills and in radio assembly plants, but to an increasing degree in aircraft factories.

The electrical industry in California uses women on light bench work, cleaning light metal and plastic die castings, and plans to use women for simple soldering work. This compares with their employment in the metal-working trades as core pasters and core makers. A Shreveport, Louisiana, electric motor company is experimenting with the use of women as armature winders. A reflector company in Massachusetts employs women on spot welding machines. Connecticut employers are considering the advisability of using women on heavy machine press work, milling machines, drill presses, brazing and welding. In Maine, if physically qualified, they are used in machine shops. Much of this work is still in an experimental stage, but the results of experimentation may tend toward greater utilization of women.

Surveys in various industries, such as metal-working, electrical equipment and transportation, indicate that no particular job may be said to be absolutely unsuitable for women. At the request of the Labor Supply and Training Section, a list of occupations in which women may be used has been prepared by the Bureau of Employment Security. This list includes hundreds of occupations in metal working, electrical manufacturing, automobile manufacturing, aircraft construction and even shipbuilding. All jobs that require great physical strength, or in which working conditions were extremely unpleasant, are excluded. World War experience indicated that women, if given the

opportunity, could acquire skills comparable to those of men. However, where these skills could be attained only by long experience which women have had no opportunity to achieve, they have been omitted from the list. Nevertheless, a great variety of occupations are included, such as die maker, etcher, core maker, barrel reamer, buffer, turret-lathe operator, valve grinder, welder, nail-making machine tender, etc.

Actual current demand, as shown by reports and indicated by actual employer orders, represents wider and wider use of women in fields formerly closed to them. As the days pass, women will furnish an increasingly important source of training material. Employers are now thinking in terms of what specific types of training will prepare women for future employment. Up to the present, these experiments have been sporadic. In any community, women may be finding jobs not heretofore open to them, but in no place is there a general trend toward wholesale employment of women in many industries simultaneously. The ultimate possibilities in this direction are still largely unexplored.

In closing, I shall take advantage of your kindness to present the pattern for the recruitment, training and placement of workers in defense occupations which has been developed.

In the first place, the Office of Production Management has urged all holders of defense contracts to fully utilize the local labor supply through the medium of their local public employment office. All employers are requested to use these offices for the recruitment of workers. Before attempting to recruit labor from outside, the local public employment office should first be consulted as to the necessity for such action and as to the methods to be employed. Labor scouting, Nation-wide advertising, and high rates of labor turnover result in disturbances of the labor market and create other wasteful and inefficient practices which the nation can ill afford in the face of the undoubted need for speed and efficiency in production. And not less important,

the Office of Production Management expects each defense employer to inform the local public employment office in advance of his labor requirements.

An intensive labor registration program has just been completed through the local public employment offices to obtain the registration of all workers who are unemployed and are seeking employment, and employed workers who are skilled in defense occupations in which labor shortages are developing, but who are not making use of these skills in their present employment. Every registrant is being carefully checked to determine his availability for a specific defense occupation. There never has been a more thorough approach to determining the nation's available labor supply and its relationship to the labor requirements of employers.

Of equal importance is the responsibility of agencies like the N.Y.A. to check with the local employment service offices as to the anticipated hirings of employers in the locality. If it is known in what occupations the greatest needs for labor are - for women and men - the better prepared an agency is to concentrate toward meeting these needs. This is no time for anything but intelligent, fast moving, efficient cooperation. No one agency, individual, employer, union can do this job. Our total combined forces are needed.

Federal Security Agency
U. S. OFFICE OF EDUCATION
Vocational Training for Defense Workers
Washington

June 20, 1941
F. G. C.

GIRLS AND WOMEN IN VOCATIONAL DEFENSE TRAINING

The actual numbers of girls and women enrolled in the National Defense Training Program of the U. S. Office of Education were small as of the latest figures reported to March 31, 1941. There are very few young women registered in the Out-of-School Youth Program which offers courses in auto mechanics, metal work, woodworking and electricity. The State of North Carolina is the only State in which there is enrollment of any consequence in the program. Larger numbers of girls and women are appearing in training, however, in preemployment and supplementary courses, particularly in the latter. States in which over 500 girls and women are enrolled in these courses in some quantity were California, Connecticut, Florida, Massachusetts, Missouri, New Jersey, New York, Pennsylvania and Virginia. The majority of courses in which women are enrolled in this program are for the most part, courses for the aircraft industry. Over one-half of the women in training in training in preemployment and supplementary courses are in training for occupations in the aircraft industry. About one-quarter are in courses related to drafting and blueprint reading and a small number in machine shop. The total number of enrollments to March 31, 1941 of girls and women in these courses is estimated at something over 1,500.

In the Engineering Defense Training Program there were over 200 women students reported in enrollment. These courses in engineering colleges in which women are enrolled include courses in aeronautical engineering and basic sciences, general engineering courses particularly engineering drawing and descriptive geometry, courses in industrial engineering such as industrial management, production engineering and production supervision. Other courses in which there are women students in the Engineering Defense Training Program are included in such headings as marine engineering and naval architecture, mechanical engineering, inspection and testing and machine design.

During the present fiscal year an additional type of training program has been classed as defense. This is the program of training of youth on National Youth Administration Work Projects. There have been much larger numbers of courses in this program than in any of the others. Approximately 35,000 were enrolled as of March 31, 1941.

U. S. OFFICE OF EDUCATION DEFENSE TRAINING FOR WOMEN

As of March 31, 1941, there were 100 women enrolled in the pre-employment training courses (mostly in Massachusetts, Missouri, New Jersey, Pennsylvania)

There were 421 women receiving courses in the supplementary training program (mostly in California, Connecticut, Florida Massachusetts, New York; only small numbers of women in these courses in Pennsylvania and Virginia)

There were 205 women receiving engineering training, in inspection work, supervision, ammunition, and explosives.

O. P. M.
Labor Division Training Program for Women

Defense training programs are to be set up for women workers where there are existing or anticipated employment opportunities for women in specific defense occupations. It is desired that the training of women workers for defense occupations be kept in step with the policies adopted by the Office of Production Management to promote the employment of women as the general labor market tightens. The Office of Production Management will determine and advise the Director of Defense Training from time to time in what occupations, in what number, and in what places the training of women should be extended in accordance with such policies.

In areas where stringencies in the labor market are developing, a concerted approach to the orderly induction of women into employment will be made by the Office of Production Management in cooperation with the Director of Defense Training of the Federal Security Agency, United States Employment Service, the Work Projects Administration, the National Youth Administration, the Women's Bureau of the Department of Labor, and organized labor groups.

Trends indicating a change of employer specifications have been noted in certain areas, such as Connecticut, Southern California, and some sections of Michigan, and the first evidences of the introduction of women into types of employment formerly held by men have been noted.

N. Y. A. TRAINING PROGRAM FOR GIRLS

The number of girls employed on the N. Y. A. program activities is still not large because there have, to date, been very few employment possibilities for them in private industry. However, as the industries find it more difficult to obtain men for these positions and show a willingness to employ women, the number of girls on these projects will be increased.

In May, 1941, there were 1,034 girls employed in machine and metal trades, which include machine shop, sheet metal, welding, and foundry; 300 girls were employed in radio and electrical work; 107 girls were employed in automotive and mechanical shops; and 810 girls were employed in drafting and blue printing. In the machine and metal shops, girls learn to perform those operations which involve the use of light machinery and require repetitive skill, finger dexterity, and accuracy. Among these, are the operation of drill presses, punch presses, bench lathes, etc. In radio and electrical shops, girls perform all types of assembly work which involve the use of hand tools and soldering. Young women are proficient also at welding and in inspection work of various kinds.

On industrial sewing projects, which are also classed among the defense industries, there were 11,088 girls employed in May. Some of the defense products made by the N. Y. A. sewing projects are barrack bags, cots, the sewing of airplane wings and parachutes, canvas bunks, various types of furnishings for forts and cantonments, and clothing repair for the army. Girls who have been trained on these projects may find employment either directly in defense industries or in private industry where they take the place of other workers who have gone into defense industries.

6-20-41

W. P. A. TRAINING PROGRAM

Establishment of the Division of Training and Re-employment, with plans for a substantial increase in the program of training workers for defense industries, was announced today by Howard O. Hunter, Commissioner of the Work Projects Administration.

Special emphasis will be placed on efforts to move W. P. A. workers into jobs in private industry, whether in defense lines or not. The program will cover all fields of training. Additional thousands are to be re-trained to modernize their skills or to adapt them to new techniques in industries, where mechanization has changed or eliminated their old jobs.

The Training and Re-Employment Division will have parity with other divisions of the W. P.A. organization such as Engineering, Community Service and Employment, Mr. Hunter explained, and will be under the supervision of an Assistant Commissioner.

Fred R. Rauch, Assistant Commissioner formerly in charge of the Employment Division will head the new Division. Mr. Rauch has taken a leading part in developing the training and re-employment program of W.P.A.

At present the vocational training classes of W.P.A. have an enrollment of approximately 34,000 workers who are being fitted for jobs in defense industry. It is expected that the number of workers receiving training will be steadily increased throughout the summer. Total enrollment since the classes started in mid-summer of 1940 has been more than 100,000. Of the 66,000 no longer in training, approximately 40,000 have found private jobs in defense lines. Those who cannot be placed in private industry immediately are returned to work on W.P.A. projects until private employment is available.

EXCERPTS FROM
LETTER OF J. W. STUDEBAKER, U. S. COMMISSIONER OF EDUCATION
February 21, 1941

(sent to all executive officers
in the Defense Program of
Vocational education)

As the number of employable men in the nation decreases and as defense industries continue to expand and call for larger numbers of women to fill jobs for which they are especially fitted, more and more women will need either supplementary or refresher vocational training.

While the supply of men to be trained under the vocational division of the National Defense Training Program is not yet exhausted it is well to study women's place in industry and prepare for their role in this national emergency. As additional men are called for selective service and as industry absorbs the supply of employable men now being trained in the program, thousands of women will be called upon for types of defense industry work for which they are fitted. . . .

I suggest that in your local planning for defense education and in your advisory committee meetings you take these facts into consideration and find the vocational niches that women can fill now or in the future as the preparedness program expands.

TRAINING - 1942

Thorne - FSA 4596

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

For Immediate Release
Tuesday, December 29, 1942 OWI-1026

Accelerated Programs for Schools of Nursing

Shortening the period for the preparation of nurses is strongly urged as a war measure in a letter being sent today to the 1,300 accredited schools of nursing throughout the country by the Health and Medical Committee and the Subcommittee on Nursing, according to Paul V. McNutt, Director of the Office of Defense Health and Welfare Services. The letter states that, "Such streamlining of nursing education is considered a war necessity and is in harmony with similar developments in other educational fields to adjust our educational efforts to specific war needs."

"The unprecedented demand for nurses for the military forces and for expanding civilian services, makes it imperative that student nurses be prepared in the shortest time consistent with sound professional standards," Mr. McNutt said. "Their services as graduate nurses will be needed in increasing numbers."

Accompanying the letter to schools of nursing are suggested adjustments in school curricula for an accelerated program. These are designed to supplement recommendations contained in the bulletin, "Nursing Education in War Time," issued in November by the National League of Nursing Education.

Miss Alma Haupt, Executive Secretary of the Subcommittee on Nursing, explained that: "No one program will fit all schools, due to differences in admission requirements, standards, clinical facilities available for instruction, and State laws, etc. Therefore several programs, of from twenty-four to thirty months' duration, have been suggested. Each school is urged to make whatever adjustment is possible in its particular situation."

Schools of nursing are being advised to make immediately such adjustments as are possible to expedite graduation for students now in the schools, as well as to organize their schedules to provide an accelerated program for incoming groups. As students complete their course, not only do they increase the number of graduate nurses, but they leave accommodations in schools of nursing and nurses' residences free for incoming students, who in turn augment the hospital's nursing staff.

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OWI-1026

OFFICE FOR EMERGENCY MANAGEMENT

OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

Washington, D. C.

Director
Federal Security Administrator

To Directors of Hospitals:

The National League of Nursing Education has sent to you a bulletin "Nursing Education in War Time", dated November 19, 1942, which contains suggestions for three different types of accelerated programs in nursing education.

Since that bulletin was prepared, the Health and Medical Committee of the Office of Defense Health and Welfare Services, at its meeting on November 18, approved the attached suggestions containing additional recommendations regarding acceleration. These recommendations were made because of the critical situation in nursing. As you know, the requirements of the Army and Navy are increasing monthly. Reports are coming in daily relative to the deficiency in nursing service in general hospitals, especially in target areas where minimum civilian needs seem to be jeopardized.

This total situation was reviewed at a joint meeting of the Subcommittee on Nursing and the Subcommittee on Hospitals held November 17, at which the executive committee of the National Nursing Council for War Service, representatives of the American Red Cross, and the Government nursing services were present. It was recognized that the acceleration of basic nursing programs is one important means of meeting the situation. However, it was also recognized that we should maintain a sound preparation for professional nursing and that no one plan for acceleration can be suggested for all of the schools of the country because of variations in local situations, clinical resources, available faculty, State laws, etc.

The attached plans are sent to you with the urgent request that you begin immediately whatever type of acceleration can be properly undertaken with your present students, and that you make the greatest possible effort to adjust your school program both

(Over)

for the students now in the school and for prospective classes.

The bulletin of the National League of Nursing Education contains suggestions for three different types of accelerated programs, one for 30 months, one for 28 months, and one for 24 months. While the 24 month program was originally planned for mature college graduates with the purpose of preparing them to graduate at the end of 24 months, it is suggested that the same arrangement could be used as a guide by schools offering a three-year course for the less well prepared student so that the instructional program could be concentrated into a 24 months period and the third year freed for supervised practice. The National League of Nursing Education suggests that if this plan is followed, a definite effort should be made to assign students in the third year to services that will round out their clinical experience and that such experience be made as educational as possible.

As you develop an accelerated program, you may count upon the National League of Nursing Education to assist you with advice and additional information.

Such streamlining of nursing education is considered a war necessity and is in harmony with similar developments in other educational fields to adjust our educational efforts to specific war needs. The Government urges your careful consideration of these plans and your application of them to your school of nursing at the earliest possible moment.

Sincerely yours,

Marion G. Howell R N.

Marion G. Howell, R.N.
Chairman, Subcommittee on Nursing
Health and Medical Committee
Office of Defense Health and Welfare Services
Washington, D.C.

James A. Crabtree

James A. Crabtree, M.D.
Executive Secretary
Health and Medical Committee

CMI-1026

November 18, 1942

To the Schools of Nursing

RECOMMENDATIONS OF THE HEALTH AND MEDICAL COMMITTEE
OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

Subject: Acceleration of the Education Program in Schools of Nursing

In order to meet present and anticipated needs for nurses in civilian and military services, a three point program is recommended:- the economic and effective utilization of all available professional nursing resources; the use of auxiliary nursing personnel for every function not requiring professional nursing skill and the preparation of increasing numbers of student nurses in accelerated programs.

A thoughtful review of the school curriculum is recommended in order to avoid overlapping and duplication in courses, and to make possible the necessary adjustments for an accelerated program.

Plans for Acceleration

Plan I proposes that the three-year basic curriculum for high school students be so planned that all organized instruction and clinical experience be completed in 30 months leaving the last six months free for supervised practice. It is suggested that students be paid during this period at the rate of three-quarters of the minimum salary paid graduate nurses. This plan would also make possible affiliations--during the last six months--in military hospitals with a plan for continued supervision. If the need became more acute, students might be released for military service at the end of the 30-month period.

That where State laws permit, an accelerated program be planned for students admitted with from two to four years of college preparation which would make it possible for such students to be graduated at the end of 24-28 months, the length of time to be determined on the basis of the student's previous educational preparation and her level of achievement in the school.

This plan is a modification of a plan for acceleration which had been sent to the schools of nursing by the League of Nursing Education. The essential difference is the payment of the students during the last six months allowing a greater readiness to release the nurse if the military needs become urgent and also for affiliation with military and other government hospitals.

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Plan II -- A Temporary Emergency Plan for Nursing Education:

Revision of the three year undergraduate program for nurses by dividing it into:

(a) 24 months of residence in dormitories, training in all basic clinical services and theory being completed during this period. For the duration of the war, emphasis should be laid upon the essential subjects of the nursing curriculum in order to afford more time for practical training.

By vacating the dormitories and other training school facilities after 24 months, the number of undergraduate nurses can be increased by 1/3 immediately. In this manner hospitals will be provided with an augmented undergraduate staff with which to carry on the hospital ward activities. Financial assistance to schools of nursing may be required in order to enable them to carry this increased teaching burden.

(b) 12 months during which the student nurse will live outside the hospital but continue to serve in an apprenticeship capacity either in the parent hospital or in an affiliated institution. As the nurse will live outside the hospital during this period of apprenticeship she should receive compensation at the minimum rate for civil service employees such as stenographers, namely, $1440.00 a year. From this amount appropriate deductions should be permissible for food, laundry and other equivalents. This pool of nurses will serve to replace the general duty nurse previously employed in hospital wards but who is no longer available.

Upon completion of the 12 months of apprenticeship which are devoted only to senior duties within the hospital, the nurse will have completed the 3 year requirement for State registration.

Train TWI

ADVANCE RELEASE

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ORR-WMG-2037

ADVANCE RELEASE: For SUNDAY Papers, December 27, 1942.

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

PM-4238

(Photographs to illustrate this story may be obtained on application to the Photographic Section, Office of War Information.)

More than 6500 war production plants in which more than 6,000,000 men and women are at work have now been serviced with the Job Instructor Training Program, of the Training Within Industry Service, the War Manpower Commission announced today.

More than 320,000 supervisors, industrial foremen, and crew chiefs have been certified as war-production job instructors and the announced goal of 335,000 "trainers" by the end of 1942 will be reached.

These figures are particularly impressive when considered in connection with the fact that two years ago, when the work started, there were only seven Job Instructor Trainers upon whom the Service could call.

Training Within Industry is especially geared to provide training for supervisors and foremen, who, in turn, develop efficient labor for plants requiring thousands on the production line immediately. Each job instructor is taught how to pass on his "know how" to workers who "don't know how." He learns to break down jobs into simple steps or operations, which he explains, demonstrates, asks the new employee to perform first under supervision and then "on his own," explaining to the instructor what he is doing and why.

Job instruction, however, is not all there is to supervisory training. In order to direct the work of a group of people, a supervisor must know processes, operations, materials, and machines -- that is, he must know practical background of the job itself. Then, he needs to know just what responsibilities are his as a representative of the plant management.

The supervisor also needs, in addition to the skill of instruction, two other skills: the skill of planning and the skill of getting cooperation from people.

Directing the headquarters office in Washington as well as the 22 district offices of TWI are high-ranking production men loaned by industry. They serve without compensation, some on a part-time basis. Field work is done by approximately 700 training consultants, who serve on part-time basis entirely as unpaid volunteers. In addition, there are 100 staff training specialists, full timed and salaried. The clerical force in field offices and in Washington headquarters is paid by the Government.

During the development of the program, some outstanding instructors of supervisors have been trained in various plants throughout the country. These men and women, now numbering over 4600, constitute a force of "Trainers" available to serve in plants other than those where they are employed. Some of these instructors are paid workers when on special assignments; others are always on their company payroll, and only their expenses are paid by the Government when they go out on special training jobs.

Figuring largely in TWI's program is the speedy upgrading of all classes of

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personnel as experience and abilities warrant, through planned job progression, job rotatation, and intensive supplementary instruction both on and off the job.

Training Within Industry has suggested outlines for an upgrading program. It covers the following points:

1. Determine job-to-job rotation for employees of each grade to give background and qualifications for progression.

2. Determine lines of job progression--the order in which new and more difficult operations should be learned.

3. For ready reference of busy superintendents and foremen as well as for information and inspiration of workers, chart experience necessary to qualify worker for each job.

4. Keep check sheets on each worker's preformance, speed in upbuilding skill, acquiring knowledge. Make brief but frequent reports to upper management.

Among the special points noted in TWI's recent annual report are the following:

Negroes are among those being trained as job instructors, wherever plants hire large numbers of Negroes for war production. For example 17 percent of the employees at the Triumph Explosives Company at Elkton, Maryland, are Negroes. Irving Hamilton, Negro former biology teacher, has been certified as a job instructor. He in turn will train many other of his race for this work.

The Government itself as well as the United States Army has adopted the Job Instructor Training program of Training Within Industry. Earlier in the year, Lieutenant General Brehon B. Somervell directed all units in the seven Services of Supply to make this training available to all supervisors. Since Government arsenals, ordnance plants, Quartermaster Corps, etc., employ almost 900,000 civilians and are still expanding, Services of Supply required supervisory training for more than 50,000 supervisors. By December 31, 1942, these men are to be trained and certified as Job Instructors. Early in January, they will be schedule for further Training Within Industry programs in Job Relations Training and Job Methods Training.

Similarly, the Navy Civil Aeronautics Administration, Federal Public Housing Authority, Federal Security Agency, General Accounting Office, Government Printing Office, Civil Service Commission, and training shops of the National Youth Administration are using job Instructor Training.

Training Within Industry offers a considerable number of documents to those interested. One of the most timely, in view of present labor demands, it is bulletin entitled, "Increasing War Production Through Employment of Women." In a foreword to this bulletin, C.R. Dooley, Director Training Within Industry Service, sta states:

"..The employer who has never had any women employers on his force may need to be reminded, in some cases, that a new woman worker is just a new worker. Careful selection should furnish women who are good prospects--the same as men. New women need training--so do men.

"The place of women in industry has been well established since the last war. One-fourth of manufacturing workers are women, and a number are in technical or managerial fields. Employers who think that the employment of women introduces some mysterious element into the factory situation need to be reminded that they have known women all their lives--secretaries, nurses, waitresses, saleswomen- and that women from all these groups will inevitably become a part of the war production effort..."

JOB INSTRUCTOR TRAINING SCORE

T.W.I. District	No. War Production Trainers available	Quota by January 2	No. 10-Hour Units started this week	No. War Production Instructors Certified
1. Upper New England	280	15,000	77	14,223
2. Lower New England	396	14,000	39	12,542
3. & 4. New York	257	23,300	95	19,232
5. New Jersey	222	25,300	43	23,078
6. E. Pa. & Delaware	171	20,700	65	19,504
7. Maryland	125	11,000	30	10,764
8. Va., N.&S. Carolina	190	5,600	30	5,225
9. So. Eastern States	200*	8,000	15*	7,487*
10. Ohio Valley	86	10,300	36	9,930
11. W. Pa. & No. W. Va.	538	21,000	50	20,170
12. Northern Ohio	197	26,200	59	23,258
13. Michigan	90	24,000	14	20,429
14. Indiana	353	14,400	18	14,317
15. Ill., & Wisconsin	349	27,100	68	22,812
16. No. Central States	188	7,300	21	7,569 ****
17. So. Central States	236	13,000	45	10,997
18. Texas & Louisiana	40	15,100	---	15,695 ****
19. Colo. Wyom., Utah	184	4,000	31	5,073 ****
20. So. Calif., Ariz., N.M.	95	17,800	60	16,301 ****
21. No. Calif., Nevada	81	14,000	39	13,218
22. Pacific Northwest	148	12,000	48	14,092
Washington, D. C.	199	6,000	35	5,256
T O T A L S This Week	4,625	336,100	238	317,214
Previous Week	4,405	334,300	246	303,134

****Exceeded Quota
*No report received this week.

ORR-WMC-2057

ADVANCE RELEASE

ADVANCE RELEASE: For WEDNESDAY Afternoon Papers, December 16, 1942.

PM-4221

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

Thousands of workers are today contributing to the war effort at better wages because months ago they had sufficient enterprise to enroll in Government-sponsored free vocational courses, Paul V. McNutt, Chairman of the War Manpower Commission, stated today.

The advantage of pre-employment training, he said, is that, as a general rule, those so prepared will get jobs more quickly at higher wages and will have better chances for rapid advancement than would be true should they come on the job green and untrained.

Present enrollments in pre-employment Vocational-Training-for-War Production-Workers courses indicate, according to the War Manpower Commission Chairman, that the public is still largely unaware of the great need for war workers. Even in localities where labor shortages obviously exist, enrollments for training have not yet reached the high points which should be attained. Throughout the country pre-employment training is now being furnished to only 160,000 in these courses. Though this figure is impressive when compared to the 53,675 who were in comparable training in June, 1940, at least 320,000 to 500,000 should be receiving this preparation today. Meanwhile industrial plants seeking trained men and women are finding it difficult to recruit them in many areas.

Today's tendency among workers, even those unskilled, is apparently to seek employment which gives chances either to learn skilled operations on the job, or to take supplemental training in out-of-factory hours- so that they may earn while they learn.

The peak of registration in Vocational-Training-for-War Production-Workers pre-employment courses was reached in July, 1942, with an enrollment of 198,472.

Registered for supplementary training today are approximately the same number as those in pre-employment training--150,000--with prospects that the figure for those in supplementary training will appreciably increase within the next few months.

The Training Within Industry Division of the War Manpower Commission, through its Job Instructor Training program, is being increasingly geared to meet today's trend to pay while learning. Late figures show that more than 300,000 foremen and crew chiefs have now been "taught to teach" operations quickly. This, in turn, means that more than 4,000,000 war workers have been speeded into full production as a result of practical "on the job" training.

Similarly, the Apprenticeship Training Service of the War Manpower Commission has adapted apprenticeship to war conditions so that all quick-learning workers are rapidly advanced to skilled ratings.

In some instances Mr. McNutt said employers have found it advantageous to put inexperienced workers on the payroll but not at actual factory work until

they have acquired proficiency in required operations at vocational schools. Other employers prefer to train their own workers "from scratch."

Nevertheless, he said, women and girls who have never been in gainful employment, as well as many older men and all those shifting into war production from non-essential industries, will find that six to ten weeks devoted to specific training for local openings indicated by the United States Employment Service field offices will yield rich returns.

A recent Baltimore survey made by the War Manpower Commission indicated that employers of more than 84 percent of all war workers in that city prefer to hire those with training. Many plants said they would pay higher salaries to trained men and women.

In all cases, a prospective trainee should first consult the local office of the United States Employment Service to learn what types of skills are in demand locally, so that preparation may be chosen which will meet war industry's needs. The United States Employment Service will refer the applicant to the proper agency where arrangements may be made for necessary training. In no case does anyone today need to pay for training for a job in war production. Free Government-sponsored courses are available to all, Mr. McNutt emphasized.

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OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Tuesday, November 10, 1942 PM - 4109

The Federal Committee on Apprenticeship today recommended to Chairman Paul V. McNutt of the War Manpower Commission that industrial establishments experiencing difficulty in manning apprenticeship systems be urged to give special consideration to "military personnel released from active service for physical reasons, or those ineligible for military service."

This recommendation, the Committee explained, also is intended to include soldiers discharged because of disabilities incurred in the war but who nevertheless are interested in learning a trade and are physically fit to do the work. The soundest and most realistic approach to problems of war training is to keep in mind the possibility that the war will continue for years, the Committee agreed.

Other sources of personnel for apprentice training, it was pointed out, are young men between 16 and 18, married men with several children, and women.

The Committee's recommendations were made in response to requests from manufacturers of war materials. Many firms have asked for advice on manning vital apprenticeship programs with some reasonable assurance of developing key craftsmen essential to production operations.

The meeting was the first since the labor-management committee was appointed by Chairman McNutt to advise the War Manpower Commission on current apprenticeship and wartime in-plant training. Attending were John P. Frey, president, Metal Trades Department, A. F. of L; Channing R. Dooley, Manager, Industrial Relations, Socony-Vacuum Oil Company, of New York; Mrs. Clara M. Beyer, Assistant Director, Division of Labor Standards, U. S. Department of Labor; William F. Patterson, Director, Apprentice and Training Service, War Manpower Commission; and James W. Kelly, Deputy Director, Vocational Training for War Production Workers, U. S. Office of Education.

Because production must today be the only consideration in training all workers, including apprentices, employers were called upon to streamline their apprenticeship programs. Some of the methods suggested were moving quick-learning apprentices ahead as rapidly as openings occur; eliminating processes not essential to war production from the apprentice's work schedule; and giving a newly hired apprentice full credit for previous experience.

Although it is possible, in the face of widespread shortages of all-round skilled workers, for war plants to break down a great number of jobs into specialized operations, the Committee indicated that there are certain key war jobs which cannot be "diluted."

The Committee also suggested that building construction and service industries encourage apprentices drafted for military service to request assignment to branches of the Armed Services for which their apprenticeship experience best qualifies them.

In this way, the Committee believes, employers will be performing a patriotic service and at the same time, guaranteeing that a supply of trained building construction and service workers will be available after the war.

"During the past year the number of apprentices in all trades increased from 180,000 to 200,000," Mr. Patterson reported, adding that "since the Apprentice and Training Service was called upon to assist in handling short-term training of war plants, more than 1,200,000 workers have benefited by its work."

McFall-WMC 749
X-6253

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Tuesday, November 17, 1942

PM-4138

Paul V. McNutt, Chairman of the War Manpower Commission, today called upon the Training Division to speed up the program to fit for service in the war production ranks the millions of inexperienced men and women who will be needed from now on until the end of the war.

The job of training the labor recruits will be under the supervision of W. W. Charters of Columbus, Ohio, who, Mr. McNutt announced, has been named Chief of the Division. Mr. Charters, he said, will have the responsibility of integrating the activities of the four training groups, now part of the Commission's organization, and of enlisting the cooperation of those functioning under other agencies.

Mr. Charters, a nationally known educator and the author of many books and articles on technical phases of education was, until his appointment, director of the Bureau of Educational Research of Ohio State University, a post he has held since 1928. He was educated at McMaster University, the Ontario Normal College, Toronto University, and the University of Chicago.

The Commission's training groups and those in charge of these programs, are: Training Within Industry Division, C. R. Dooley, Director; National Youth Administration, Aubrey Williams, Administrator; Apprentice-Training Service, William Patterson, Director; and Vocational-Training for War Production Workers, L. S. Hawkins, Director.

Also under the War Manpower Commission and working closely with the other training groups is the Engineering Science and Management War Training Service. This service is under the general direction of Dr. Edward C. Elliott, President of Purdue University.

"Under the direction of Mr. Charters the activities of all of these groups will be expanded and closely coordinated," Mr. McNutt said. "He will be expected to see to it that training is provided for the older workers as well as the young men and women, regardless of race or national origin or physical handicaps."

Mr. McNutt added that practically all skilled workers are now employed, either on war production or in civilian industries. To meet the demand that will arise between now and the end of 1943, he said that many workers would be withdrawn from civilian industries that are least essential to the war effort.

"For many workers, special training will have to be provided to fit them for jobs in the war plants," Mr. McNutt said. "Continuous in-plant training will be fully utilized to promote the up-grading of men already employed, and the filling of vacancies."

The Apprentice-Training and Training-Within-Industry services are specially assigned to in-plant training for production. On-the-job training programs are provided for (a) supervisors and foremen, (b) production operators, (c) all-round skilled mechanics, and (d) engineers, technicians and office workers.

(over)

The National Youth Administration's part in the program for the training of young men and women is to provide pre-employment training through work experience and diversified skills required for war production. This training is carried on in N.Y.A. shops located in various parts of the country.

In State and local schools throughout the country, the Vocational Education system offers training courses of a varied character to both employed and unemployed persons, all keyed to the war production demand for workers.

The service offered under this educational program provides training to prepare young men and women for war industry jobs. It also provides supplementary training which assists in upgrading employed individuals by adding or increasing operating skills and related technical knowledge. Under its rural war production training program, short intensive courses are given to persons engaged in agricultural pursuit to increase production of essential foods.

Since January 1, the records of the training programs show:

The Training-Within-Industry Division extended training to 275,000 supervisors who, in turn, it is estimated, have been responsible for the on-the-job training of more than 4,000,000 workers.

The Apprentice-Training Division reports that more than 1,200,000 workers have benefited by its participation in short-time or advancing-worker training in war plants. Assistance was given more than 27,000 employers.

Persons taking the Vocational Education courses total more than 2,713,000.

The National Youth Administration reports the training of 364,000.

In each of the 12 regions set up by the War Manpower Commission, field staffs of the four training groups are already making good progress. Mr. McNutt said that Mr. Charters will undertake to bring about a unification of their activities and increase their scope and efficiency.

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ADVANCE RELEASE

ADVANCE RELEASE: For SUNDAY Papers, May 16, 1943
ORR-WMC--2037

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION PM-4382

Enrollment of women high school graduates in summer courses for engineering, science, management, and war training in more than one thousand towns and cities is expected to result in furnishing war industry before the end of the year with at least 100,000 trained workers, Chairman Paul V. McNutt of the War Manpower Commission announced today.

Of the approximately two million additional women who it is estimated will be needed for war work this year, probably 200,000 will be up-graded, according to ability, to supervisory or technical positions, Mr. McNutt pointed out. Women who have availed themselves of these courses should be able to qualify for many of the better-paid jobs, he added.

Citing data received from Dr. W. W. Charters, Director of the War Manpower Commission's Bureau of Training, Mr. McNutt said that the 30,000 women now enrolled for the 10-16 weeks tuition-free training courses popularly known as ESMWT courses, are learning engineering drawing, precision inspection, the chemistry of explosives, map-making, and similar techniques. Summer courses are to be given, in many instances, as day-courses running six to eight hours daily for ten to sixteen weeks.

ESMWT courses in a particular locality are related directly to the college-level training needs of local industries, Mr. McNutt added. Thus, in proximity to an aircraft plant, one may expect courses in aircraft stress analysis; near shipyards, courses in ship lofting; near steel mills, metallurgical courses.

Typical of the types of ESMWT courses which train women to serve various industries are the following:

Communications Industries

Engineering Aid (Radio)
Inspection of Naval Materiels (communication equipment)
Principles of Radio
Pre-Electronic Instructor Training for Women

Shipbuilding Industries

Ship Machinery for Women
Ship Piping Layout for Women
Hull Ship Construction for Women

Aircraft Industries

Aircraft Materials inspection for Women
Airplane Drafting for Women
Elements of Machine Design for Women
Elements of Engineering for Women

X-15189

Ordnance Manufacturing Industries

Ordnance Inspection for Women
Ordnance Engineering Aids
Ballistics Engineering
Ordnance Safety
Elements of Ordnance Machine Design

Explosives Manufacturing Industries

Chemistry of Smokeless Powder
Chemical Properties of Explosives
Fundamentals of Explosives Manufacture

Chemical Industries

Chemical Testing & Inspection
Quantitative Chemical Techniques for Women
Practical Chemical Analysis for Women
Introductory Organic Chemistry
Food Dehydration Techniques

Mining & Metallurgical Industries (Steel, Aluminum, etc.)

Elementary Metallurgy
Physical Metallurgy
Chemistry of Metals
Metallurgical Techniques for Women
Metallographic Laboratory Practice for Women

The Rubber Industry

Elements of Synthetic Rubber Manufacture
Synthetic Rubber From Petroleum
Petroleum Chemistry Including Butadiene
Modern Rubber Technology & Practice

The Petroleum Industry

Petroleum Refinery Engineering
Testing of Petroleum Products
Chemical Technology for Petroleum
Petroleum Engineering

The Army Mapping Program (Civil Service)

Military Map Making
Use of Surveying Instruments and Surveying Field Procedure
Photogrammetry and Interpretation of Aerial Photographs

Activities that Occur Widely Throughout Many Industries

Accounting
Elements of Engineering
Elements of Machine Design
Industrial Drafting
Inspection Practices
Office Supervision
Personnel Administration
Safety Engineering

The ESMWT courses, the Chairman pointed out, are offered under various plans. Employers may request "in-service" courses, for instance, in which their employees may be trained on company time or after hours for upgrading to positions of greater responsibility.

Pre-employment courses may be offered for qualified persons seeking to prepare for their first technical job in war industry.

Part-time courses which operate outside working hours for employed persons may be organized--running perhaps for six or more hours per week.

Full-time courses may meet during the daytime on a forty or more hour per week schedule.

Of recent ESMWT enrollments, Mr. McNutt said, about 66 per cent were persons employed in war industries while in training. Nearly 6 per cent were being paid by employers while attending classes which absorbed their full attention. An additional 20 per cent of the trainees were employed, but not in war industries--were preparing to shift to more essential activities. Only about 8 per cent were unemployed.

Women high school graduates with aptitude for mathematics are particularly desired for the courses, the Chairman said. College-trained women and those with credits for physics or chemistry are even more acceptable.

Applications for entering ESMWT courses, it was explained, are received at the major colleges and universities in every state, and the U. S. Office of Education will send upon request, a list of institutions where the courses are given both on the campus and through extension facilities.

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OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Monday, June 14, 1943

PM-4400

More than half of the men and women taking the Rural War Production courses offered by the War Manpower Commission appear to be ~~interested~~ principally in the operation of farm machinery, food processing and egg production.

These three courses account for 62.4 percent of the total number of persons in training as of March 31, 1943, Dr. W. W. Charters, Director of the Commission's Bureau of Training, reported today to Chairman Paul V. McNutt. Dr. W. T. Spanton of the U.S. Office of Education and the War Manpower Commission's Bureau of Training is in charge of the rural training program.

Dr. Charters reported that the number of persons in training on March 31, 1943, was 172,666 of whom 38,565 were women.

States with the largest numbers of Rural War Production trainees were: Mississippi, Texas, Louisiana, Alabama, North Carolina, Arkansas, Kentucky, and Tennessee. About 54 percent of all persons taking the Rural War Production Training were enrolled in these eight States.

From July 1, 1942 through March 31, 1943, 436,361 persons have been enrolled for this training.

The average length of a course is anywhere from two to ten weeks--two to three hours per week.

(END)

X-16868

Robinson

Appendix A

N.A.M. SUGGESTIONS WITH RESPECT TO THE EMPLOYMENT AND TRAINING OF WOMEN FOR WAR JOBS

After thorough study of the many factors that enter into the employment and training of large numbers of women for war jobs, we present the following statement as representing a sound approach to the subject:

I. We believe that women can satisfactorily fill all or most jobs performed by men, subject only to the limitations of strength and physical requirements. However, although true, this statement should not preclude recognition of the fact that jobs which by nature are particularly dirty, dusty, hot or wet, are not desirable for women and should not be performed by women until after other more suitable jobs have been filled.

II. There is little difference between men and women as regards their satisfactory performance in industry. Sound employment and personnel practices are applicable to both men and women and no emphasis should be placed on any distinctions between them as workers.

III. Wage Policies

In the matter of wage policies we advocate the principle of equal pay for equal performance by women. In effectuating this policy it is essential that consideration be given to methods whereby "equal work" may be measured. In this connection we recommend that industry give thought to the wider use of such techniques as job analysis and evaluation to determine the precise nature of the job and the elements comprising it.

In approaching this problem certain pertinent factors are apparent, among them:

1. The practical difficulties of measuring what purports to be the same job without using such techniques as job analysis and evaluation to determine whether the work is strictly comparable. Experience shows that women in a factory generally require more servicing than men in the way of "setting-up," lifting, and the like.

2. The higher rate of absenteeism among women as compared to men.

3. The greater susceptibility of women to fatigue makes it necessary that they be allotted more rest periods.

4. The general inability to upgrade women to better jobs such as foremen, supervisors, etc. This prevents the best development of industrial workers.

5. The shorter industrial life of the women worker.

6. The designation of certain jobs in a company - because they are more suitable and desirable for women - as "women jobs" and are therefore performed only by women.

IV. Preliminary Planning

A. These preliminary steps may be helpful in approaching the problem:

1. Estimate the number of male workers who will be lost during the coming year, by departments and on a monthly basis

2. Determine how many of these men can be replaced by women.

3. Estimate the number of new jobs that will open up during the year ahead for which women can be employed.

B. Experience has shown that it is considered better practice to have a group of 10 or 15 women start on an operation of a job rather than bring only two or three women into a department. This does not necessarily mean segregation of women, but represents a more practical way of changing over "men jobs," to "women jobs," and also simplifies the personnel problems involved in dealing with women.

V. Recruiting of Women

A. Potential Labor Supply

1. At the present time the female labor market is more than adequate throughout the country as a whole, including as it does women who have heretofore done industrial work and those who are now seeking to enter the factory for the first time. There are, however, some areas where the supply is beginning to show signs of dwindling.

2. It is important to differentiate between women who are suited for light, precision, clean work and the type who would be more suitable for some "dirty" jobs, such as machine operation, tasks that involve some oil and dirt, etc. For the latter work, women from rural areas would be more suitable.

3. Consideration should be given to the physical capacities of women: whether tall or short, slight of build or more robust, etc.

4. There is a very meager supply of technically trained females for laboratory, engineering and research work.

5. In many communities, the United States Employment Service is proving useful in screening out unsuitable applicants and referring only good prospects.

B. Application Forms

1. The same application form is suitable for both men and women.

2. In addition, it may be desirable for the female applicant to give the name of her husband, his birthplace, his citizenship status, etc.

C. Interview Arrangements

1. It is generally desirable that women be interviewed by women, wherever possible.

2. In companies where the individuals handling personnel are all men, it might be possible to use the supervisor of women or the forelady to do some interviewing in the employment office at certain periods of the day.

3. A number of companies have found it sound practice to have a woman applicant interviewed by both a man and a woman so that a more objective appraisal of the woman's qualifications can be obtained.

D. Selection Techniques

1. The value of temperament testing for women should receive careful consideration as an aid in the selection of applicants. It is possible through these tests to determine the "nervous" reaction of women

to monotonous, repetitive jobs, and also to weed out certain individuals who, because of their temperament, will not adjust properly to their environment.

2. Aptitude testing as a selection technique is valuable for women as well as for men. In certain cities, the United States Employment Service is giving aptitude tests to applicants and, guided by the requirements of individual companies, is referring only such applicants as will be suitable for employment.

VI. Factors To Consider In Selecting Suitable Jobs For Women

A. Physical Examinations

1. Pre-employment physical examinations are as important for women as for men, and where they are used the examination is much the same for both sexes.
2. The physical factors of strength and fatigue must be given recognition in selecting women for certain jobs.

B. Work Environment

1. Considerable friction can be eliminated among work groups by selecting women who are of much the same type and have interests in common.
2. Where groups of young girls are used, it is often a stabilizing factor to have several older women included in the group.

C. Working Conditions

1. Adequate arrangements must be made in connection with safety precautions, lighting and ventilation, sanitary facilities, dressing rooms, rest rooms, lunch rooms, etc.
2. It is desirable to create pleasant, clean and orderly surroundings.

D. Wearing Apparel

1. A diversity of practice is followed in connection with clothing for women in the factory. In some companies one uniform costume for women has proved successful, whether it be an overall or a slack suit. In other companies, three, four or five different costumes are available from which women are free to make their selection.
2. Generally, the two-piece slack suit is preferred by women.
3. It may be desirable, where possible, for women employees to help determine the question of wearing apparel where no uniform practice has been previously followed, so that they may have some latitude in the choice of color, style, etc.
4. In any event, whatever clothing is worn, it is essential that the various safety factors involved be given primary consideration - no flowing skirts around machinery, no loose hair that can catch in a machine, safety shoes to prevent slipping and falling, etc.

VII. Job Analysis

A. Job analysis is of great importance in determining which jobs can be satisfactorily filled by women. It is essential in setting wage rates. It also enables a company to formulate definite job descriptions so that the employment office can be guided in its selection of women.

VIII. Hours of Work - State Law Requirements, Etc.

A. Many states have legal requirements governing standards of working conditions for women, restricted hours of work (both as to length and time of day) and occupations. In many cases, certain state requirements regarding hours of work - overtime and shift restrictions - are being waived or modified for the duration where necessary for war production.

B. Shift Work

1. In many companies women are working on all three shifts.

2. Surprisingly, many women prefer to work the midnight shift because of the extra premiums involved.

3. Experience shows that married women lose less time from work if employed on the moring shift. A housewife working on the afternoon shift generally has less physical reserve with which to carry on her job in the factory, perhaps by reason of the fact that she has done her household duties and is tired when she comes on the job.

4. Married women with children, however, find it desirable to work on the afternoon shift so that children at home can be cared for by the husband (if he is on the morning shift) or some other member of the family.

5. However, from the health and production point of view it is desirable for married women to work on the morning shift.

IX. Preparing Plant Personnel for Influx of Women

A. It is desirable to inform supervisors, the line organization and production workers that women are going to be employed, so as to promote the proper attitude on their part.

B. Pre-selling the idea results in a better attitude toward incoming women. The atmosphere is friendly, pleasant and is conducive to a woman's feeling "at home."

X. Induction Program

A. It is desirable to establish a definite induction program to facilitate the satisfactory adjustment of women to their new jobs. This is particularly true with regard to women who have never worked in industry before. It is vital that they be properly oriented and that they feel comfortable in their work environment.

B. It is equally important that women have confidence in their ability to perform the job and that they feel free to ask questions if occasion arises.

XI. Training

A. No particular change need be made in a company's regular training proceaure In may companies women are being trained alongside men, both being given

the same instruction.

B. In starting to teach a woman a job, it is advisable not to over-estimate her background of knowledge; teach the job slowly, one point at a time; tell her about the safety hazards of the job in such a way that she will not be nervous.

XII. Supervision of Women

A. Male supervisors may require some education in the manner of dealing with women if they have never directed women before.

B. Male Supervision

1. It is generally believed that women respond better to male than to female supervision.

2. In cases where foreladies are used as the immediate supervision, it has been found helpful to have foremen as final and over-all authority in the department.

C. Women as First Line Supervision

1. Where foreladies are used as first line supervision they frequently handle routine problems concerning women effectively, often cutting the foreman's job in half.

2. Forelaaies are successful in adjusting minor grievances and in handling some of the less important operating problems, thus leaving the foreman free to carry on major supervisory duties.

3. The use of competent, well-qualified women as first line supervisors has, in a number of cases, resulted in greater efficiency and output by women groups.

XIII. Miscellaneous Problems

A. Single Women vs. Married Women

1. With the increasing need for employing women workers, many companies are discarding their former policies against the employment of married women. However, rules against married women still exist in some cases.

2. A number of companies find that married women are more dependable and productive than young, single girls.

B. Absenteeism

1. Statistics show that the absenteeism of women generally exceeds that of male workers very substantially. A limited survey recently showed this to be 100% greater.

2. The absenteeism of married women exceeds that of single girls, according to this same survey. However, many companies stated that married women are more dependable and report regularly for work, whereas single girls are more prone to stay away without sufficient cause.

3. Some suggestions to overcome this greater absenteeism on the part of women:

a. Bonus for attendance.

b. Check-up by the company nurse after a day's absence to determine whether illness or soldiering was the cause.

c. If the company maintains a sickness-benefit payment plan, it might be desirable, as disciplinary action, to consider the reduction of benefits for single-day absences.

d. In some companies where a single day absence is paid for, discontinuance of this policy may bring home to employees the need for regular attendance.

C. Adequate Transportation

1. With the employment of large numbers of women, it is important to do some preliminary planning to provide adequate transportation for women who do not have easy access to the community's transportation facilities. This is particularly true for late shift workers where it may be necessary to collaborate with the community transportation system to arrange that facilities be available at the hours when women go to and from work.

2. Where plants are located in dark or unsavory neighborhoods, companies should provide protection to women until they reach transportation facilities.

3. Where new plants have sprung up in communities without adequate transportation facilities, companies should work out plans for adequate transportation in collaboration with the local chamber of commerce or other community groups.

D. Union Restrictions

1. Where union agreements restrict the extent to which women may be employed, it may be necessary to work out an agreement with unions to waive these restrictions.

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4/15/42

Robinson

WOMEN'S BUREAU
APR 15 1942
DEPT OF LABOR

WAR PRODUCTION BOARD

Labor Division
Training within Industry

Bulletin #7

INCREASING WAR PRODUCTION THROUGH EMPLOYMENT OF WOMEN

Employing women in war industries in increasing numbers is inescapable, but should not be looked at as a substitute procedure. Employing a woman for any job that she can do, or can learn to do, will release a man either for work not suitable for women or for active armed service.

The employer who has never had any women employees on his force may need to be reminded, in some cases, that a new woman worker is just a new worker. Careful selection should furnish women who are good prospects - the same as men. New women need training - so do new men. They are entering a new environment, but so are farm hands who take factory jobs.

The place of women in industry has been well established since the last war. One-fourth of manufacturing workers are women, and a number are in technical or managerial fields. Employers who think that the employment of women introduces some mysterious element into the factory situation need to be reminded that they have known women all their lives - secretaries, nurses, waitresses, saleswomen - and that women from all these groups will inevitably become a part of the war production effort.

This bulletin draws on the experience of a number of industries where women workers have had an important part for many years, and on the experience of British war production.

C. R. Dooley, Director
Training within Industry

WOMEN IN THE LABOR SUPPLY PICTURE

In many industrial centers there already are labor shortages. In general, women will not add to the supply of skilled labor, but they do present a large and promising source of workers for a wide variety of operations. In England it has been necessary to require young women to take part in the war effort, either through auxiliary service or actual productive work in factories. There are many women who now need to earn wages. Curtailment of civilian production releases numbers of women with varying degrees of skill. These women are available for retraining for war production work.

SPECIAL FACTORS TO CONSIDER IN EMPLOYING WOMEN

Introduction of women workers in industries or plants where they have not previously been employed will often mean that women will actually be put on "men's work." It will not always be a simple placement and training process - but, when the snags are anticipated, British experience shows that remarkable results are achieved. Management needs

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to give advance, and immediate consideration to some general facts - some limitations, some advantages, and some changes in facilities and equipment.

State Laws Regarding Women Workers

Many states have "protective" legislation which sets standards for working conditions for women, limits hours (both as to length and time of day), and restricts occupations. In some states provisions have been made to permit modification of standards where necessary for war production. State laws covering a particular plant should be checked as the first step. The Industrial Commission or the State Secretary of Labor can supply specific information.

Physical Limitations of Women Workers

There are some physical limitations for women. As a means of overcoming them, mechanical aids may be used - for example, in load-lifting, roller conveyors and pedestal lifts are helpful. Tools may need to be scaled to women and benches made lower for assembly workers.

Safety and the Woman Worker

The safety records of women are better than those of men, but there are special hazards to be recognized. It may be necessary to require the wearing of protective clothing. The safety engineer who selects caps and jumpers will do well to consult with the women who will wear the clothing - his interest may be in finding a cap which will insure that hair will not catch in a machine, while the employee may also be concerned about a cap which will protect hair from dust and not ruin a new hair-do. It is poor practice to select clothing which requires disciplinary action to enforce wearing or which causes resentment.

Absence Records

Women's records for days-off are worse than men's. They are not altogether due to illness but frequently to unavoidable home responsibilities. A "flying squadron" of utility operators who can fill in on numerous jobs is a common solution.

Labor Turnover

Women do not change jobs as often as men. Good supervision, satisfactory working conditions, adequate wages, and fair treatment will hold women to their jobs and thus, by decreased turnover, reduce overall training time.

Supervision

Many persons will advocate the employment of a woman personnel officer to work on problems connected with working women. This is based on the assumption that there is an innate and intangible difference between men and women as employees that will be beyond a man's experience. This is not the best basis for the introduction of women

to the production shop. Women are entering war production on the same terms as men, even if it is necessary to make physical segregation in a few respects and to separate groups in individual situations. Their relation to the personnel department is the same as new men. Women have a useful place in personnel offices, but not necessarily as concerned with women employees.

The woman who is new as a factory employee is making a change. Skilled personnel people should handle cases relating to people new to industrial situations.

Women as first-line supervisors can sometimes handle routine departmental problems concerning women more easily than men, and women can train women. The opening of even minor supervisory positions to women will provide a promotion incentive. However, if women supervisors do not correspond in authority with men in similar positions, the employees may be inclined to by-pass the woman supervisor and take their problems to the man whom they feel is "the boss."

SELECTION AND PLACEMENT OF WOMEN WORKERS

All women will not, of course, make productive factory employees. The selection procedure should include particular attention to the background brought to the job - education, training, and aptitudes. The housewife who is untrained and perhaps free for only part-time work may move into civilian production and service operations, releasing for full-time war production employment, women who have had regular work experience.

Even in the comparatively short time of current war production, there are a number of instances of the value of certain backgrounds of work requiring deft hands - girls who were needle-workers or hairdressers have proved specially adaptable for precision metal work. With good training, they work to tolerances measured in ten-thousandths of an inch. Jobs requiring "feel," such as minute assembly and adjustment, are examples of jobs where placement of women has produced particularly good results, in many instances better than men.

A common opinion is, "Women have no mechanical ability." It is more accurate to say that they have little "mechanical familiarity." Women are not accustomed to working with wrenches and drills, but the lowered level at which training begins also means an opportunity to begin training with correct procedures - they do not bring "picked-up" bad habits to the job.

TRAINING FOR WOMEN THE SAME AS FOR MEN

Well-planned training for women who have been selected and placed according to good standards will provide a large, productive new force and give perfectly satisfactory results in every respect.

Get ready for the job. What is the work? Should it be broken up into several jobs, to be taught separately?

Consider the work place, the tools. Are changes needed?

Find out what the new workers already know. Is some preliminary instruction needed in shop arithmetic or blueprint reading? Would advance familiarity with small tools help? Will "shop terms and procedures" need special explanation? What pre-employment training is available?

Train on the job. Does instruction given on the job include supervised tryout and follow-up? Does the new employee know where to go for help?

Provide supplementary instruction. Does the plant provide training to round-out background and increase skills? Are there public vocational courses available?

Upgrade to higher skills. Are women being moved on to more difficult jobs as they show ability, in order to make maximum use of their best skills?

JOBS FOR WOMEN IN WAR INDUSTRY

To turn again to British experience, women are working successfully on these jobs:

assembly	lathe work (including the use of calipers and micrometers)
band-sawing	optical grinding and polishing
boring	press operating
crane operation	riveting
drilling	turning
grinding	welding
inspecting	

To summarize the overall problem, the contractor must:

1. Consider the employment of women with an open mind.
2. Recognize that there is, as always, a training job to do.

Washington, D. C.
March, 1942

Robinson

Misc. 3497
VE-ND

Federal Security Agency
U. S. OFFICE OF EDUCATION
Vocational Training for Defense Workers
Washington

February 18, 1942

Sent to: State Directors of Vocational Training for Defense Workers

Sent by: L. S. Hawkins, Director of Vocational Training for Defense Workers

Subject: Training of Women

We have just received from the Director of Defense Training, Federal Security Agency, the following statement of policy of the Labor Division of the War Production Board concerning the training of women.

This statement should be distributed to all local directors of vocational training for defense workers; it supersedes any previous releases in conflict with the announced policy.

Vocational school authorities should comply with this policy immediately.

The U. S. Employment Service and the National Youth Administration also are distributing this policy statement to their State and local personnel.

POLICY REGARDING TRAINING OF WOMEN

In view of the increasing shortages of male workers and the increasing demand for the employment of women throughout the country and in a wide range of occupations, the Labor Division of the War Production Board has announced the policy that the employment of women shall be facilitated to meet the needs of the war program. This necessitates the immediate extension of defense training to women on a basis of quality with the training of men.

In referring women to defense training courses the same policies that govern the referral of men should be followed; that is, they should be selected on the basis of qualification for the occupations in which training is offered, due consideration being given to the physical requirements of the occupations.

This policy amends and amplifies the provisions of paragraph 6, Supplement No. 1 to Administrative Procedures Governing the Conduct of NYA - VE-ND Defense Work Projects and Training, dated November 29, 1941, as well as present procedures of the pre-employment and supplementary courses given in the public vocational schools. It shall not be construed to interfere with the immediate necessity for training of workers displaced by Government curtailments on production or other governmental action.

TRAINING FOR WAR PRODUCTION WORKERS
(Excerpts from Education for Victory, September 15, 1942.)

This is the third fiscal year in which the program known as the Vocational Training for War Production Workers has been functioning. The program for 1942-43 derives its authority from that part of Public Law 647, 77th Congress, Second Session, headed Education and Training, Defense Workers. The legislation appropriates 94 million dollars "for the cost of vocational courses of less than college grade" provided by public agencies in vocational schools.

The Act further provides for two types of training -- preemployment and refresher courses, and courses supplementary to employment.

Administratively the preemployment and refresher courses have been interpreted to mean a type of training which is offered to persons who are currently unemployed or who are otherwise available for full-time employment in a unit-skilled job in war industry.

The purpose of preemployment training is to provide specific instruction in the skills required to hold a specific job in a specific industry.

The refresher aspect of this type of training refers to the instruction provided for workers who at some time in the past commanded a usable skill but in the passage of time have lost that skill and now require a brief course to refresh their previous abilities.

Trainees for the preemployment and refresher courses are normally recruited from the registers of the local offices of the United States Employment Service and the Work Projects Administration.

Supplementary training provides instruction to workers who are already employed in a war industry occupation, for the purpose of aiding such workers to assume jobs of greater skill and responsibility than they are now capable of performing.

In an increasing number of instances, trainees are classified as supplementary when they are assigned to full-time attendance in a vocational school prior to the time they are actually put to work on a specific job. In these instances they are receiving wages from an employer while in attendance at these classes.

The program is essentially a cooperative arrangement between the U. S. Office of Education representing the interest of the Federal Government and the State boards for vocational education who actually have the responsibility for operating the program in their various jurisdictions.

The major responsibility for maintaining the day-to-day contacts with the State boards for vocational education is that of four regional agents, each responsible for a defined number of States. The regions are broken down as follows: North Atlantic, Southern, Central, and Western. Working under the immediate direction of the regional agents are a number of field representatives who work with State directors and their staff members in the development and supervision of the program. One or more of these field representatives will be assigned to each War Manpower Commission regional office.

A significant aspect of the administration of the war production training programs has been the development of cooperative relationships with other public agencies. Procedures and policies have been jointly determined with the United States Employment Service and to a lesser extent the Work Projects Administration, since these agencies constitute the source of trainees for the preemployment and refresher courses. In broad outline the procedure by which workers are referred to reemployment classes by the United States Employment Service, is as follows:

The local school authorities draw a requisition upon the local office of the United States Employment Service for a specified number of trainees. This requisition includes information relating to the occupation or trade for which training is to be given, the dictionary job title, the operation performed, the machine tools and instruments involved in the training, the materials used, the special qualifications which referrals should have, and working conditions on the job for which training is to be given. When training has been terminated the school notifies the employment office on a special form and analytic rating cards are transmitted to the local employment office explaining the qualifications of the trainee as a result of the training.

The United States Employment Service is the official agency designated to place workers in war industries and give effect to priorities in referral to jobs. When employers make direct requests to school authorities for workers, the above designation is brought to their attention and they are either directed to place their order with the United States Employment Service or the order is taken and relayed to the United States Employment Service, which makes referrals.

The requirements for training personnel in both civilian and military classifications have stimulated the development of cooperative relationships with the Army and Navy. The typical arrangement is that prospective trainees are recruited by the Civil Service Commission and assigned to public vocational classes for from 6 to 8 weeks, receiving a specified remuneration while in training. The instruction is specific and is adjusted to the particular needs of the Government establishment in which the trainees will be working. In the Signal Corps program, which is the largest currently, individuals are being given training during employment as mechanic learners and junior engineer repairmen. In the arsenals such occupations as gunsmith and inspector are being taught. Specific phases of aircraft engine mechanics are being taught to the trainees allocated to the air depots. The financing of the cost of training is from the funds appropriated to the Office of Education.

The actual operation of the training program, that is, the hiring of teachers, conduct of classes, and other related activities, is the responsibility, within the State, of the respective State board for vocational education in every State and territory and through the State board, of the local board of education. Each State has a State director of Vocational Training for War Production Workers who is the executive officer immediately in charge of the program.

In the Engineering, Science, and Management War Training program (ESMWT), full-time and part-time courses are offered to meet local and national needs for technical and supervisory personnel. These courses are available to high-school graduates and persons with more advanced preparation at about 200 institutions throughout the Nation. To stimulate training, the cost of tuition is met by the Federal Government; and the only expense incurred by the trainee is for travel, subsistence, books, and minor supplies. Excluding board and lodging, the typical enrollee pays less than $10 for his training.

More than nine-tenths of the courses in ESMWT are part-time, given outside working hours for the benefit of those who, while already employed, are seeking to prepare themselves for positions of greater responsibility and usefulness in the war effort.

The typical full-time course comprises from 400 to 800 hours of intensive class and laboratory work, often calling for as many as 6 hours' attendance daily. Such courses are intended primarily to fit those with little or no technical education or experience for work as assistants in laboratories, drafting rooms, engineering departments, and accounting and personnel offices of war industries. Among the full-time courses offered during the last fiscal year were: Fundamentals of engineering, aeronautical engineering, motion study and work simplification, introduction to tool design, surveying and topographic mapping, analytical chemistry, industrial supervision, and fundamentals of radio.

To meet critical personnel shortages of industries with war contracts, such courses as ship drafting, textile finishing and dyeing, optics and optical instruments, airplane stress analysis, and theory of machine design have been offered in the areas where the need was apparent.

Nation-wide needs for certain types of training have been discovered, and quite standardized courses designed to meet them. Some of these courses were offered simultaneously in several States. Among the courses offered in response to widespread needs were: Chemistry of powder and explosives, ordnance inspection, radio communications, industrial safety engineering, topographic map drafting, and photogrammetry. The selection of trainees for many of these courses is made by the United States Civil Service Commission; and, in some instances, the men and women selected are employed by the Federal Government when they begin training.

The U. S. Office of Education will furnish a list of the colleges and universities that are participating inESMWT; but those who wish to enroll for training should apply directly to the Engineering, Science, and Management War Training institutional representative at one of the cooperating institutions.

December 1, 1942

WAR TRAINING FOR WOMEN

by Mildred Foreman and
Bernice Hubbard May
University of California.

Recruiting college-type, employable women for ESMWT courses is becoming the major operating problem. Factors making recruiting difficult are: (1) the small numbers of women with preparation in mathematics and science; (2) the ease with which the college woman finds employment in California and elsewhere, often in jobs which she soon leaves because of their monotony; (3) the competition offered by the overseas adventures and the uniforms of WAACS and WAVES, and by the high wages paid by assembly line jobs, and by vocational- level training programs (i. e., mechanic-helper training, Air Service Command, $100 a month); (4) the lack, to date, of concerted national promotion for ESMWT directed toward individual women, and effectively utilizing the motion picture, the national magazines read by women, and the radio programs to which they listen. Conditions making for unsatisfactory living in industrial areas--lack of housing and of day care for children, slow and crowded local transportation, high cost of restaurant meals, and the like--impede recruiting for either training or employment; but are beyond the scope of this report except to recommend that training be scheduled at times and places planned to avoid adding to local transportation and housing problems.

Some six hundred California women have been trained by the University of California Engineering, Science and Management War Training and placed at work in aircraft, shipyards and war plants of many kinds. Factors in influencing this group to train were: (1) vigorous local promotion directed to both patriotism and self-interest and using newspaper and radio publicity, as well as the help of the United States Employment Service and the United States Civil Service, women's organizations, and counsellors for women at schools and colleges; (2) the

availability of training near home, sometimes at a junior or teachers' college not eligible to participate directly in ESMWT; (3) the assurance of placement either by USES or by the University Bureau of Occupations, plus the spreading word of the success of last spring's trainees on the job and the size of their pay checks; (4) adequate learner's allowance for trainees in courses twelve weeks or more in length. The most effective inducement in recruiting, as well as the strongest indication of industry's appreciation of the worth of ESMWT instruction, is this payment plan, now in operation with six major aircraft companies and being considered by other war industries. Trainees making satisfactory progress in full-time courses (40-hour week) are paid at varying rates, with $100 a month the minimum. The plan assures the college woman of her job and the company of her services at the end of the training period.

Personnel shortages in sub-professional levels vary with industries to be manned; to be effective training must be geared to specific local needs. Nevertheless, there is a sufficiently clear over-all pattern in personnel shortages in national war production to make desirable concerted action on training for women by ESMWT institutions. Such a concerted national plan would depend, in large measure, for its success on two elements provided by the U. S. Office of Education: (1) special care in approving courses for women to insure uniformly high standards in selection and training of students, reasonable agreement in titles and course content, and reasonable job committments secured from local industry in advance of training; and (2) an effective national program of promotion directed toward the college women and their prospective employers. Draftsmen, computers, materials inspectors, industrial chemists, and junior engineers are needed in varying numbers the country over. The national shortages total thousands. A united ESMWT training effort, timed to precede the major Selective Service withdrawals of technical men and supported by national publicity appealing both to patriotism and self-interest, can develop women equal to the work to be done.

For immediate release
June 6, 1941

U.S.DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

URGENT NEED FOR BETTER TRAINING PROGRAM FOR WOMEN WORKERS
Discussed by U. S. Women's Bureau Director

The Achilles heel of our labor supply in the present emergency is lack of an adequate training program for our second line of defense workers - the woman power of the Nation. This is the opinion of Mary Anderson, Director of the Women's Bureau, U. S. Department of Labor, who has made expert study of the needs and capabilities of women workers both in the World War of 1917-18 and in the current crisis.

"Industrial training of women is a vital part of our preparedness program. This goes for both types of our special defense training - the pre-employment and the within industry systems," Miss Anderson asserted today.

"For example, greatly expanded and speeded-up training facilities for women would prove the 'open sesame' for thousands of women to secure jobs in and to meet the needs of the rapidly expanding aircraft plants."

The ideal industrial training for women as well as men for aircraft production or any other type of manufacture is in the plant, she firmly believes, speaking from her own extensive experience as a machine operator for 18 years prior to her Government job.

Realizing the need also of pre-job training for women she stressed its value as acquainting them with the tools, machines, and materials used in industry, and therefore serving to open up real employment opportunities.

"We can not afford not to train these women. It is later than many persons think in regard to an all-out demand for the strategic advance of the second line of defense workers.

"Four factors are responsible for the almost overnight change of front as to use of woman power by many managements concerned with production of aircraft, guns, powder, tanks, machine tools, and other war materials. First, the backlog of unemployed men is rapidly shrinking. Second, the Selective Service System is taking considerable toll of men from the labor force. Third, industrial expansion is still on the upgrade, with the peak far from reached. Fourth, the President's recent unlimited emergency [illegible]

declaration has widened our defense horizons.

"The Women's Bureau investigations of both new industrial developments and suddenly expanding factories reveal plans for the recruiting of thousands of women for defense production in the next six months. Also many letters from unemployed women stress both their need of jobs and their difficulties in getting them.

"Though industry wants women and women want jobs, future bottle-necks in the absorption of women by industry are likely unless the present bottle-necks as to their training are broken.

"The comparatively few women who are getting the benefit of defense vocational courses and the more fortunate few who are receiving within-industry training are striking proof of what could and should be done on a much vaster scale.

"For example, Massachusetts and Connecticut report considerable progress in preparing women, both in the regular and in the defense vocational courses, for jobs in factories making machine tools, component parts for defense products, airplane engines, and so on, who measure up to industry's specifications.

"A short time ago, employers were advised by the Springfield employment office to begin training women for industrial jobs in western Massachusetts as the only means of preventing a threatened collapse of defense production in that area, due to labor shortage.

"For similar reason, Maryland vocational and employment officials recently took steps to train women for essential defense jobs.

"An example of training women to be a valuable labor supply for key defense industrial work is the Camden (New Jersey) R.C.A. program of teaching hundreds of girls to assemble and solder delicate wire connections.

"In a California aircraft plant a few women experienced in assembly work now are employed to assemble small electrical and mechanical parts. They are the forerunners of larger numbers that may be expected to participate in job opportunities of this expanding industry. In localities here and there are other types of plants reported as employing women for the first time in skilled or semi-skilled metal work.

"Many girls from 17 to 24 are being instructed in N.Y.A. work-shop projects in regard to various mechanical and electrical operations that lead to their employment in defense industries, to operate lathes, drills, punch presses, power saws, milling machines, power-sewing machines, etc. Of particular interest is a new venture in the Buffalo N.Y.A. where a production project is initiating training for over 300 girls along the lines of usual machine shop operations, sheet metal forming, welding, electrical assembly, and radio repair, tool crib and storeroom tending, drafting and blue-printing, and woodshop work."

The need for special attention to training facilities for mature women and married women was pointed out by Miss Anderson as particularly urgent. "We find the pendulum is swinging back again," she said, "to a demand by management in some places for the employment of married women, on the basis that they are more desirable for the 2 p.m. to 10 p.m. shift, now in force in many plants. A number of these women having worked in our industries in 1917-18 are considered by some employers to be valuable because of their knowledge of munitions. To guarantee efficiency, however, refresher courses for such women are essential either outside or within the factory, before they are put on production lines."

Miss Anderson believes that steps to include women much more definitely and extensively in defense training should be taken without delay by authorities - both public and private - in many communities carrying a heavy load of defense production. Informed women as representatives of important organizations have a responsible role to enact in furthering such plans and seeing that women are trained both in the manipulative skills and in such related skills as reading blue prints, micrometers, calipers, gages, and of having knowledge of metals and shop mathematics."

VOCATIONAL TRAINING OF WOMEN FOR DEFENSE WORK

Report as of April 30, 1942

ACTIVE NET ENROLLMENT AS OF APRIL 30, 1942

PRE-EMPLOYMENT COURSES

Number enrolled - 23,902 women were enrolled, an increase of 8,000 women or 55 percent since March 31, 1942. Women made up 13 percent of the total enrollment.

Over half of the enrollments were in the 7 highly industrialized States - New York, 14 percent, California, 12 percent, Pennsylvania, 8 percent, Ohio, 7 percent, and about 5 percent each in Maryland, Massachusetts, and Michigan. The greatest increase in the enrollment over the month's period was in Michigan, which increased from about 200 women to over 1,000.

Type of courses - the largest enrollments were in the aviation services, 37 percent, and the next largest, 25 percent, in the machine shop courses.

Enrollment in the four principal courses -

Type of course	Number of women	Percent of total women enrolled
Aviation services	8,932	37
Machine shop	5,891	25
Radio services	1,131	5
Ship & boat building	921	4

SUPPLEMENTARY COURSES

Number enrolled - 5,000 women, 3 percent of the total, were enrolled on April 30, 1942, an increase of nearly 1,500 women in a month's period. The largest numbers of women enrolled were in New York, 28 percent, California, 16 percent, and Michigan, 12 percent. There was a decrease in the enrollment in both Indiana and Connecticut.

Type of courses - nearly 40 percent of the women were enrolled in the aviation services and 20 percent in drafting and blue print reading.

CUMULATIVE TOTAL ENROLLMENT FROM JULY 1, 1941 THROUGH APRIL 30, 1942

In the 10 months period, nearly 65,000 women, 7 percent of the total enrollment, have been enrolled in the pre-employment courses, and nearly 12,000, or 1½ percent of the total enrollment, in the supplementary.

California had the largest enrollment in the pre-employment courses, about 11,000 women, and New York was next with 7,400 women.

In the supplementary courses, New York was high, about 2,500 women were enrolled, one-fifth of the total enrollment of women. California and

Michigan came next, each having about 1,400 women enrolled in their supplementary courses.

ENGINEERING, SCIENCE, AND MANAGEMENT DEFENSE TRAINING

As of April 30, 1942, 13,230 women were enrolled in these courses, 10% of the total enrollment. Pennsylvania accounted for 5,500 of the women, about 42 percent of the total women enrollment. The next largest number was in Alabama, 900, 7 percent of the total women.

The largest number of women, 5,100, 39 percent of the total women enrolled, was in the production supervision courses, the next largest 3,730 women, 28 percent of total women was in general engineering classes and 9.4 percent or 1,250 women were taking work in electrical engineering.

In addition to the formal training programs, many plants are training thousands of women on the job - especially in aircraft and ammunition plants.

WOMEN'S BUREAU
JAN 7 1942
WASHINGTON, D.C.

Misc. 3489

TRAINING WOMEN DEFENSE WORKERS

By Louise Moore, Agent
Trade and ~~Industrial~~ Education
Girls and Women

January 7, 1942

Federal Security Agency
U. S. OFFICE OF EDUCATION
Vocational Training for Defense Workers
Washington

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Federal Security Agency
U. S. OFFICE OF EDUCATION
Vocational Training for Defense Workers
Washington

Misc. 3489

February 15, 1942

Training Women Defense Workers

By Louise Moore, Agent
Trade and Industrial Education
Girls and Women

We must use constantly increasing numbers of women as defense workers if we are to succeed in equipping an adequate armed force, building a two-ocean navy, fabricating supplies for our allies, and maintaining adequate stores of material for civilian use and defense. Other warring nations have found the employment of all available women essential and, as the war progresses, we shall be obliged to follow their example.

PRESENT SITUATION

During the first year and a half of the emergency we required relatively few women defense workers because of the large number of unemployed men. In July 1940, we had several million such men available. Public opinion did not countenance the use of women as long as men could be found to do the emergency work. Many employers, unfamiliar with the labor laws for women, exaggerated the difficulties likely to arise from regulations regarding night work, limitations of hours, and provision of toilet facilities.

Because priorities released large numbers of men, extensive employment of women as defense workers was retarded during 1941. Defense industries have been located in relatively few centers; men migrated to other areas for defense employment and many women took their places in nondefense enterprises.

The events of December 7, 1941, necessitated the immediate promotion of enormously greater amounts of war supplies. Even before December 7, new methods of subcontracting tended to place defense contracts in new localities, and the completion of buildings and of the process of tooling up defense industries has made the employment of many more workers possible. All of these activities have resulted in a depletion of our supplies of male workers, and employers are preparing to employ women in constantly larger numbers.

The Labor Division of the War Production Board has recently announced the following policy, the effect of which will be to accelerate greatly the program of training women defense workers. "The employment of women shall be facilitated to meet the needs of the war program. This necessitates the immediate extension of defense training to women on a basis of equality with the training of men." This policy was, however, not intended to "interfere with the immediate necessity for training of workers displaced by Government curtailments in production or other Government action."

In training workers for employment in different communities, preference is given to the training of men. It is considered socially undesirable to encourage extensive migration of women from one community to another.

VALUE OF WOMEN AS EMPLOYEES

Fortunately, experienced employers of women agree that the problems incident to recruiting, training, and employing women are relatively simple, and that women make valuable and efficient employees. Women have for years formed a very considerable proportion of the working force in retail stores, in food processing and packing organizations, in the electrical-assembly industry, in laundries, and in the clothing and textile industries. Women have for outnumbered men in teaching and in professional nursing. Employers experienced in handling female help agree with English employers of women in defense work, and with employers of World War I who pioneered in employing women, that women's work is entirely acceptable in quality and quantity. The National Industrial Conference Board, in a report in July 1918, stated: "Experience of employers in the metal trades in the United States has clearly demonstrated the practicability of employing women in a large variety of manufacturing operations. In a majority of establishments included in this investigation, where women were employed in the same work, they have equaled or excelled men in respect to output. In some processes, their superiority is marked. As a rule, however, they have not been employed on highly skilled work, and it is on light repetitive work requiring little experience or initiative that they have made their best record. Nevertheless, it cannot fairly be concluded from available evidence that women are unfitted for highly skilled operations, since in this country, at least, they have had no adequate test of their ability."

TRAINING OF WOMEN WORKERS BY INDUSTRIAL CONCERNS

Training of new workers, upgrading of older workers, and apprentice training for skilled occupations have always been, in large measure, the responsibility of employers. The largest number of employees continue to be trained on the job. Many women are being so trained in the emergency, particularly where simple operations are involved. Obviously, such training is necessary in occupations like the fabricating and inspecting of munitions, where the product is dangerous to handle.

USE OF FEDERAL FUNDS FOR TRAINING WOMEN DEFENSE WORKERS

Operations requiring the use of machines under the control of the operator, tasks requiring relatively long instruction and practice before trade proficiency is obtained, and those requiring skill in related mathematics or in the use of precision instruments, can profitably be taught in trade preparatory classes.

Congress made appropriations in 1940 and in 1941 for training defense workers, without regard to sex, color, race, or religion. This training is on two levels, college grade and less than college grade.

Since the initiation of the program in November 1940, 1,685 women have been enrolled in 74 colleges and universities offering defense courses in aviation, engineering, and management, the costs of which are defrayed from Federal funds. These are short-unit courses, giving students who be of immediate assistance to industry in different

fields. Women have studied aeronautical, chemical, civil, electrical, industrial, marine, mechanical, metallurgical, and general engineering; personnel procedures; and inspecting and testing. The colleges report no particular difficulty in placing these women at the end of their training period.

TRAINING OF WOMEN DEFENSE WORKERS: COURSES OF LESS THAN COLLEGE GRADE

The Office of Production Management has designated the occupations in the fields in which defense training of less than college grade may be offered.* They are as follows: Aircrafts and parts; air transportation (common carrier), air transportation (except common carriers), and air transportation services; aluminum products; ammunition; automobile and automobile equipment; communication; telephone, telegraph, and related services; electrical machinery; firearms; industrial chemicals; iron and steel and their products; machine tools; models and patterns (except paper patterns); motorcycles, bicycles, and parts, nonferrous metal foundries (except aluminum); professional and scientific instruments, photographic apparatus, and optical goods; railroad equipment; shipbuilding and ship repairing; utilities (electric and gas). This list may be changed by the Office of Production Management, and provision is made in special cases for permitting training in industries not listed.

SOURCE OF TRAINEES: TYPES OF COURSES

Trainees for courses come from two sources: Works Projects Administration and the public employment service. These agencies, by means of tests and consideration of previous industrial experience, try to select trainees likely to be successful as defense workers. Teachers in defense classes are expected to reject trainees who prove unsuitable after a reasonable trial period in the shop. All of the agencies, in constant contact with employers, try to meet the individual firm requirements as to sex, age, physique, and education of trainees selected for them. Into trade preparatory classes come trainees without previous working experience; those with experience in fields other than the particular defense work for which training is given, and a few with experience in somewhat similar fields. Courses vary in length according to the aptitude of the trainees, who are allowed to progress as fast as they can. "Related work" includes necessary mathematics, blueprint reading, elementary metallurgy, reading of precision measuring instruments, and necessary safety precautions. Trainees attend pre-employment classes 30 hours a week.

Supplementary classes are attended by employed defense workers who wish to learn new operations, who wish to become better acquainted with the theory of their work, or who wish to increase their skills by additional practice. Supplementary trainees attend classes 15 hours a week during their leisure hours.

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*(U.S.) Federal Security Agency. List of Occupations Approved by the Office of Production Management for Vocational Training Courses for Defense Workers, p. 72.

What Can the Training Do

NUMBERS OF WOMEN ENROLLED: METHODS OF TEACHING

The number of women enrolled in trade preparatory and supplementary classes from July 1940 to September 30, 1941, was 7,117; since the first of October 1941, the numbers have increased. Enrollments of women during the quarter ended November 30, 1941, were 12,018 in pre-employment classes and 2,184 in supplementary classes.

The teachers of courses for defense workers have usually been men, because only men can qualify under State requirements for experience in trade and industrial teaching. In such fields as electrical assembly this is not true, because qualified women are available as teachers. Many of the men teachers admitted that it was with great reluctance that they undertook classes of women for jobs usually considered men's field. This was particularly true for riveting and machine-tool work. "I took the class because the superintendent told me I must do it," said one teacher. "I thought the women would be dumb, and that I would be wasting my time. They are the best trainees I ever had, and now I want to keep right on with women trainees." "When the women first came, I laid out work to last the class 3 weeks, and a class of men would have just about cleaned it up in that time; the women finished it in 3 nights," said another supervisor of a class of women which meets in the evening. The gratification of these teachers at the success of their women trainees, though distinctly uncomplimentary to the sex, shows how unfounded most of the fears of employers are about the probable success of women as defense workers.

So far, women have been taught mostly in segregated classes; there seems to be a decided trend toward mixed classes and, since men and women usually work in the same departments of a factory, there seems to be no good reason for separating them in a training program.

Women defense workers, preparing to do the same work as men, are instructed at the same training stations, use the same equipment and supplies, and their instruction follows the same teaching outline. When they go out on a job their pay is at the same rate as men's.

State departments of labor and industry tend to abrogate all night-work laws for women during the present emergency. Any employer contemplating the use of women should, of course, check with the State board of labor and industry about current rulings on all labor laws for women. Training classes for women defense workers are usually held during the day or the early evening; a few classes meet from 11 p. m. to 6 a. m. Since training for defense workers is on a 24-hour basis in many places, some classes for women defense workers may later be held during the late night hours, but this does not yet appear to be necessary.

FIELDS OF TRAINING FOR WOMEN DEFENSE WORKERS

The fields in which women defense workers may be trained are limited only by the demands of defense industry and by State laws forbidding employment of women in certain designated fields.

Women are being trained to work as tracers and detailers in drafting rooms; some of them have shown particular aptitude for this work and have been of excellent service to employers.

For years, electrical-equipment and supply-manufacturing companies have employed large numbers of women, often as many as one-third of the working force. As these businesses expand, the employers continue to keep this ratio, and some are prepared to increase it. Women are being trained in defense classes to attach terminals, assemble radios, wind coils, make assemblies for electrical appliances and for airplanes, inspect electrical subassemblies, and inspect and test finished appliances. They learn the techniques of rapid and accurate assembling and testing of the many parts used in our modern electrical devices.

For decades, women have been power sewing-machine operators. Now they are taught the work of parachute stitchers and the making of both flare and man parachutes. They do shroud work (parachute cords) and construction and attachment. Some have been given supplementary work in weaving parachute silk. Women have long been employed in fabric work on planes; in class they are taught stitching of materials on power machines, stretching and pinning of fabric, edge stitching, and rib stitching.

Sheet-metal work has been taught to a large number of women trainees. They learn to make lay-outs, using blueprints; they learn to use the brake, the drill press, and the riveting gun. They are taught to rivet in the usual positions required for subassembly of airplanes. Spot welding has been taught to many women and, of late, acetylene welding and hydrogen welding also have been taught in a few localities.

Women have been found especially adept in lens grinding. This is an example of the breaking down of a highly skilled trade into component easily learned parts. Women's delicacy of touch and accuracy have made them acceptable workers after a reasonable period of instruction. The same accuracy and delicacy of touch are required in the grinding, piercing, and polishing of watch jewels, another highly skilled trade now broken down into many operations. Women are very successful at this type of work in the instrument trade where such jewels are required.

More and more women now are being trained as operators on machine tools, being taught to operate lathes, milling machines, planers, and shapers. In some courses they are taught to make their own set-ups and to grind their tools. They learn to operate power punch presses and kick presses, to do tapping (both hand and machine), filing, polishing, and buffing. In certain localities, women have been taught to operate bench lathes and screw machines. Several girls' trade schools, offering "multi-operation" courses as part of their regular work, have adapted these courses, which include instruction on a variety of machines, to meet the needs of local defense industries.

Courses in subassembly and in testing and inspecting have been offered in some places. Women learn Rockwell testing and the uses of precision measuring instruments, the micrometer, vernier calipers, and various gages.

SOURCES OF WORKERS

About one-fourth of all women in the United States, 14 years of age and over, normally work for pay. This proportion can be considerably increased in an emergency by recruiting women who do not usually work outside the home: Unmarried girls and young married women without young children. Older women with previous industrial experience are willing to return temporarily to wage-earning occupations. It has been estimated that the proportion of women working for wages can be almost doubled for the duration of the war, if the need becomes acute. Women, like men, respond to any appeal to their patriotism. Many of the women who will become available are of a mentally superior type, and many have had valuable working experiences. They are apt pupils, and become responsible workers, as was proved in World War I. Our newer techniques of selection, training, and placement will rapidly convert this potential force of women workers into an actual working force when the emergency need for their services is recognized.

As the number of women defense workers increases, it is probable that the enrollment of women in supplementary courses also will increase. World War I proved that constantly larger numbers of women will be needed as subforewomen, lead women, and instructors. Employers doubtless will request the training of these forewomen, and the vocational schools, with their long experience in foremen training, can fill this need.

Another lesson of World War I was that, on the whole, women are not a mobile labor force. They must be trained for jobs in their own locality and cannot profitably be trained for jobs a long distance from home.

There is no limit to the usefulness of women as defense workers. Suitable training in pre-employment and supplementary courses is making their abilities quickly available in our constantly widening field of war effort.

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8. _____. Women's Bureau. Series of labor laws for women in the States. 1941. Mimeo. (Digest of labor laws, State and Federal) Free on request to Women's Bureau.
   States for which bulletins are available:

Illinois	New York
Kentucky	North Carolina
Maryland	Ohio
Massachusetts	Pennsylvania
Michigan	Tennessee
New Jersey	Texas

9. _____. Women's Bureau. Women in war industries in Great Britain. Oct. 1941. Mimeo. Sent free on request from Women's Bureau.

10. _____. Women's Bureau. Women's factory employment in an expanding aircraft program. May 1941. Mimeo. Sent free on request from Women's Bureau.

Engineering Department

ESTIMATING DATA SHEET

Sheet No. 1 of 1 Sheets

Work for U. S. Office of Education Department

Subject - Installation of Toilet and Washing Facilities for Group of 100 Women

Date Sept. 24, 1941 Estimators Engineering Department

ITEM NO.	DESCRIPTION	LABOR	MATERIAL	TOTAL
	N. Y. State labor laws would require for a group of 100 women - 5 closets and 5 lavatories.			
1.	Purchase and install 5 closet tank and bowl combinations, including seats.	60.00	120.00	180.00
2.	Purchase and install 5 wall mounted lavatories, complete with fixtures and traps.	30.00	50.00	80.00
3.	Build wooden compartments with doors and latches around closets (app. 250 sq. ft. wood)	20.00	15.00	35.00
4.	Lay waterproof floor in room with 6" high mop-board effect at walls - at least 3/4" thick. (Assume area of room app. 250 sq. ft.)	12.50	12.50	25.00
5.	Install radiator under window - app. 20 sq. ft. of radiation - inc. valve, trap and piping.	10.00	15.00	25.00
6.	Install 12" fan in top of window for ventilation - equipped with motor-side guard and automatic louvres - including wiring and switch.	15.00	33.00	48.00
7.	Install 2 lights overhead with wall switch.	10.00	10.00	20.00
8.	Install 3 paper-towel dispensers, 5 soap dispensers, 5 toilet-paper holders, 1 napkin machine, 5 covered metal containers for napkins, and 3 wire baskets for towels.	10.00	20.00	30.00
9.	Allowance for painting of new partitions, as well as walls and ceiling of room - including stenciling of "Women" on door.	20.00	16.00	36.00
	Totals -	187.50	291.50	479.00

11. (U.S.) Federal Security Agency, Office of Education. Aviation training for women. By Robert W. Hambrook. Washington, The Bureau, 1941. Mimeo. (Misc. 2594) Free on request from U.S. Office of Education.

12. _____. List of occupations approved by the Office of Production Management for vocational training courses for defense workers. Washington, U.S. Government Printing Office, 30 cents.

PRESENT TRENDS AND FUTURE DEVELOPMENTS IN

WAR PRODUCTION TRAINING OF WOMEN

Just over a year ago women began to enter war industries. Headlines carried the news. Employers were apprehensive. Some Congressmen saw the doom of the American Home if housewives left homes for factories. Male workers saw (in fancy's eye) their jobs snatched from them as women displaced them. Women who had been so peacefully accepted by their brothers as secretaries, teachers or nurses, seemed to assume frankenstein proportions, and panic or skepticism reigned. But the women themselves had not changed. They were merely entering a new field. And the average man was dreading what so many human beings have dreaded since the beginning of history - the inroad of a new idea. Their fear of this new idea was based upon two opinions, neither one founded upon facts: one, that women have no mechanical ability: the other, that women are a distracting influence in industry.

But necessity was at the helm. Employers knew that women would have to be employed as men were drawn into the armed forces. A few industries reluctantly admitted women into aircraft work. They would be used in electrical assembly, sheet metal work and even in some machine shops. What of welding and shipyard work? The answer was usually indulgent laughter. As soon expect women to service planes for men to fly as to wield welding torches or combat the roughness of shipyard work. Let women sew or knit, type or teach, possibly drive rivets and shape metal, but don't talk absurdities about women and shipyards.

Changes in Industrial Methods

That, then, was "Woman's Place" in the early fall of 1941. But Time Marched On. As men have been drawn from industry in increasing numbers, women have had to replace (not displace) them. To expedite this, jobs have been broken down to the simplest of operations. Lens grinding, which once required the skill of an experienced craftsman, has been broken down into nine simple operations, any one of which a new worker can learn quickly. Planes that were once a custom built job have moved over into mass production so that the new worker, with little training, can turn out one small unit after another, each part perfect in itself; each part joining hundreds of other parts to make the sum total of a flying fortress or a dive bomber.

Death of Bugaboos

As these changes took place, it became evident that women have mechanical ability. They lacked mechanical familiarity, and this was quickly corrected through training. As members of our staff traveled from coast to coast, it was fun to pick up samples of women's workmanship - a tool post for a lathe, a tap wrench, a Vee block, all carefully machined to a fine precision, or a cluster weld of five or six pipes smoothly joined by the molten metal flowing under the welder's torch. It was fun to show these to skeptical friends. Always the same answer: "A woman never made that! Impossible! That's a man's job. She must be exceptional."

But now it's December 1942. A year has gone since Pearl Harbor. And none of this is news. Two corpses of old bugaboos lie lifeless before us. Women do have mechanical ability. Women are not a distracting influence in industry (if there is adequate supervision and if personnel policies are sound). Women are working side by side with men turning out production. Let us take a short, quick tour and see some of the work they are doing, work for which they have been trained in our War Production Training Classes.

Women Today

In Puget Navy Yard, across the Sound from Seattle, the sky looks like a small town circus with the balloon man showing his wares. Dozens of barrage balloons trail their steel cables spelling destruction for dive bombers. Under the watch of these silent sentinels women are working amid the noise and dirt of the Navy Yard. One woman operates a tremendous crane. Actually it's not difficult - just a push button and lever job - but it requires care. In the same yard women are operating turret lathes, engraving machines and sensitive drills. In the ship-fitting shops they are using drill press and cold saw, and operating the hydraulic press. For all these tasks training is streamlined to the job.

In Vultee Aircraft in Southern California women trained in the surrounding Trade Schools are doing almost every type of job in the plant. They are assembling wires for instrument panels, a bewildering maze of wires. They are driving rivet guns, forming sheet metal, heat-treating and testing metals, crawling in and out of the fuselage, working on final inspection and assembly.

In Georgia women are working in a fuse plant, weighing out powder for detonators. On the assembly line the firm uses two older women with each four younger ones. There is no maximum age limit. The workers are expected to weigh powder for eight detonators a minute and measurements must be absolutely accurate. Scales are compensated for pressure and temperature and are even shielded from draughts. Because explosives cannot be handled in the training school, trainees practice with sand and thus gain judgment and speed.

Welding, - that field that was so tightly closed to women - has burst wide open. The Oregon shipyards have ordered 1,000 women ship welders. Daily we see alert, patriotic women don heavy cumbersome clothes to protect from hot metal, pull the welders' helmets over glamorous curls, and there in a world by themselves watch the pool of molten metal flow as they direct its course with flaming torches. Even on the ways women are welding. They were placed there as a temporary expedient when there was a shortage of men. They're still there.

In the Charlestown Navy Yard the Master Mechanic boasts of the fine work done by one of the women whom he promoted, and who is now working in a supervisory capacity helping new machine and tool operators to adjust to their tasks.

In Greeley, Colorado, we saw women and men training together in the assembly, maintenance and repair of radios for the Signal Corps.

Women have invaded the foundries, too. In Oregon, New York and in Florida women are taught core-making. This is not such a far cry from the same skill that turned out cookies in fantastic shapes. In fact much of this war production work is an easy transfer of skills from women's more usual occupations. The dressmaker who has handled patterns finds that a template is just a metal pattern. The woman who could apply nail polish smoothly finds that she can make the solder flow with equal smoothness as she assembles wires on an instrument panel. Heat treating is only baking applied to metal instead of bread dough. The can opener is an excellent example of the principle of levers.

Needless requirements abolished by Necessity

As the use of women has been doubled and tripled, employers are discarding more than the first two bugaboos. Rules of selection have changed. Elaborate testing programs are disappearing. Age specifications are changing. The early pattern of 18-35 in age, not over 5'9" in height and not more than 2½ pounds per inch of height is obsolete. Employers find that older women offer a stability and maturity often lacking in the 18 year olds. In many communities the maximum age limit has been completely eliminated. Potential ability as a worker is what counts. Past experience, present aptitudes and personal interviews help to determine this.

As the door is opening to older women so is it opening to married women and to negro women. A job rate of pay is slowly replacing the old sex rate of pay. In the newer plants in particular women doing the same work as men receive the same wages.

Affect upon Training Program

Training that is sound must keep pace with the market for which it trains. To speed the training of women to meet war needs over the last twelve months, courses have been shortened. Those starting at eight weeks have dropped to six and then to four. We are cutting out frills and giving only what is necessary to prepare the worker to do effectively the operation for which she is hired. This is not the time to train all-round craftsmen.

This last year has taught us the need for emphasis upon nomenclature and drill. Because women have not been familiar with the vocabulary of tools, they must now make up for lost time. Each trainee must requisition tools by name from the tool crib and must know the names of machines and parts. The woman who handles a mix-master or vacuum cleaner with more familiarity than a riveting gun must be taught through frequent drill the proper positioning of hand tools.

We are stressing safety in our training, and we must continue to do so without let-up. Women new to machine shops do not realize that a loose belt or cuff or pocket can pull a person into a machine to be mangled. A novice with a drill press does not know that the moving machinery creates an attraction that sucks the hair toward the revolving drill and that a serious scalping can result. A woman who has never removed her wedding ring must realize that sentiment can cost her her

finger if that ring catches on some piece of machinery and does not release the hand until too late. Open-toed shoes invite injury with metal scrap, heavy stock or spraying acid. We must refuse to allow a worker to approach a machine unless she is safely dressed for the job.

A recent growing trend is that of training on production. Industry selects the trainees, puts them on the pay-roll and sends them to the schools for training. They work on production which is returned to the company. Material is conserved. Those training are sure of employment. The training is more realistic. However, constant care must be taken lest training be subordinated to production.

Only during the last year have women been employed as civilian employees of the Armed Forces. Today women apply through Civil Service, take whatever tests are required and then begin a training which is usually about three months in duration. They are paid during this period and at its termination go directly into jobs or take more advanced training. Women are servicing aircraft motors for the Air Corps. They are servicing the delicate instruments of communication for the Signal Corps. They serve as inspectors and as automotive workers for the Ordnance Department, as Mechanic's helpers for the Navy and as laboratory workers for the Chemical Warfare Division. The list of jobs which they do for the Army and Navy grows almost daily.

The pattern of social life is no longer a thing apart from the war effort. Movies, picnics and parties are scheduled round the clock as are the training classes, and the employment shifts. Church services are held within plants to lessen absenteeism. Citizens are beginning to feel a personal responsibility in meeting the problems that arise within their communities. Nurseries are springing up to care for the children of working mothers. In Globe Arizona out-of-town trainees have been given dormitory accommodations in the basement of the High School. A group of civic-minded women have formed teams of four to prepare and serve dinners daily to these trainees. The total cost to each trainee is 10¢. In Steamboat Springs, Colorado, the whole town turned out at the housewarming of the Club House provided for the young men and women training in radio work for the Signal Corps. The trainees contribute to carry the current expenses. In Trinidad, Arizona, the Junior College held one of its regular dances and invited all of the War Production Trainees to attend. In the same state the Rotary Club in one city and a public-spirited man in another made funds available as loans to cover subsistence and transportation until the first "pay day". No security beyond the trainee's signature was asked. This confidence has not been misused.

Need of Recruiting

With all these changes and developments the situation has, in a way, reversed itself. Last year we were trying to sell to industry the idea of using women. Today is industry is sold. In fact more women are needed than have volunteered. So today we are faced with the urgency of selling to women the idea of entering industry. A year ago we were busy initiating and establishing the training. This year we must concentrate on improving the quality and efficiency of our training.

In many strategic areas the labor market is getting tighter and tighter.

There are empty training stations in the schools and yet we have not really tapped the reservoir of womanpower. The United States Employment Service who function it is to recruit trainees is in many places welcoming the help of the school authorities in recruiting. Women who have never worked before must enter this program. Women who do not need to earn come in for patriotic reasons. All sorts of ingenious devices have been to elicit interest. Training classes have been set up in store show windows to catch the public eye. Parades have led to a large recruiting hall. Sound trucks, movie flashes and radio skits have told of the need. Publicity has been circulated with the daily milk bottle, with packages from retail stores, through the services of boy scouts, Jr. Commandos, Draft Boards and Army Recruiting Stations. Women's Clubs have and will continue to render a service.

The Future

What the future will bring, no one knows. Prophecy at its best is poor business. Yet without straining our prophesying powers unduly, it is reasonable to expect certain developments. We know that there must be a large production program in the future to supply those consumers goods which are not now manufactured. We know there will be great demand from countries other than ours for such goods. We can look forward to a continued program of aircraft production. Such a person as Glenn L. Martin prophesies that the aviation program after the war will surpass any aviation program we have yet seen.

We know, too, that many men will not return from this war and that many will return maimed and injured. It will necessarily be a broad program of rehabilitation and re-training.

It is reasonable to expect that certain recent developments in industry have come to stay. The breakdown of jobs to their simplest operations has proved its worth in increased production. It is questionable whether we shall ever return to the custom built plan and ship which proceeded the last production type.

Perhaps the most challenging question of all is whether or not women will stay in industry. Many will, of course, return to their homes. But the fact must be faced that many women need to earn and can make a real contribution to industry. The paying of a job rate instead of a sex rate should protect displacement of male workers by cheap labor. But surely women who must be self-supporting merit some protection and have a right to employment.

he Immediate Future

Whatever the needs of remote years, we must face now the needs of the immediate future. We do not know all there is to know about training but we must continue to study, to learn from other's mistakes, and from our own. We will undoubtedly see a drop in pre-employment and an increase in supplementary training. We shall probably see a growing trend in training on production with all of the trainees on a pay roll. Training equipment must be moved to those localities where it is most needed. Probably we shall move it constantly nearer to the plants and in many cases into the plants.

Three "musts" deserve consideration. With women new to work and with instructors new to the training of women, we must give careful teacher training and thorough student orientation and secondly, we must watch among women trainees and workers for potential leadership. Women are gradually coming into supervisory jobs. Every woman who takes a position of responsibility releases one more man for higher responsibilities. It is not fair to our women to plunge them into supervisory work without leadership and foremanship training.

And finally, we must be prepared for any change in demands. Our training programs will have to be flexible, recognizing that there is almost no job that a woman cannot do, and realizing that we may constantly have to start training of women in new operations.

We are told that we need an army of 10,000,000, that each man in the army must have 18 behind him to furnish supplies, transportation, food and ammunition. This makes a total of 190,000,000 and in the entire United States, even counting the babies, we have only about 130,000,000 people. In short, we must do the impossible and the only answer seems to be a slogan which I saw posted on the wall of a California ship yard:

"If it is difficult, we must do it right away.
If it is impossible it may take a little longer."

WAR MANPOWER COMMISSION
Apprentice-Training Service

302 Lullwater Bldg.
Atlanta, Ga.
Oct. 29, 1942

Miss Mary Anderson, Director
Women's Bureau
U.S. Department of Labor
Washington, D.C.

Dear Miss Anderson:

The shipyards and metal working industries around Savannah, Georgia, and Brunswick, Georgia, have just begun employing women workers. As you well know, some industries make the employment of women a momentous task. However, there are a few new problems that must be met. The answers to these new problems, without doubt, can be answered by your department.

The Steel Products Company of Savannah was the first to employ women welders in this area. It was a matter of necessity with them, after the Selective Serfice had taken a large number of their employees.

Mrs. Winifred Murrin, 1115 East 42d Street, Savannah, Georgia, led the group of about twelve women in securing employment. She had many difficulties and prejudices to overcome. Her story is very interesting. Mrs. Murrin is now employed as Loftsman by the Savnnah Machine and Foundry Company, Shipbuilding Division.

Miss Mary W. Powell, Brunswick Marine Construction Company, Brunswick, Georgia, has been elevated to Supervisor of Women. Her duties are similar to that of a Hostess.

Mr. J. E. McCord, Superintendent of Steel Products Company, is doing the best he can to provide the proper facilities for women workers.

Each of these people have virtually the same problems. I suggest that Special Bulletins Numbers 1, 2, and 3 be sent to them. A pamphlet on hours of work and rest periods will be helpful. Also, that someone in your field staff contact each one so as to answer the many questions they have.

You may rest assured that this office will do all that we can relative to the employment of women, but there are a number of questions which I can't answer on this subject. It may be that you would like your field representative to contact this office before visiting these firms. May I say that I will be very glad to give further assistance on this subject, and such a contact would be very helpful to me.

Yours truly,

Charles A. Britton
Apprenticeship Field Representative

Apprentice Training Service

Field Representative's Weekly Report on Service
Rendered in Connection with War Production Problems

Nov. 9-13, 1942

Brunswick Marine Construction Corp.
Brunswick, Gsa.

During the week and at various times, Mary W. Powell [Women's Supervisor] requested certain information and ideas relative to the employment of women in this yard.

They have secured uniforms for all of the women and are using a good safety procedure. It is necessary for all women to be interviewed by Mrs. Powell before going onto the job. Mr. C. W. Brown, foreman of the Tool Room, is using women tool room checkers on the day shift, and he wanted to use them on the night shifts. This, of course, brought up the subject of morals and methods of handling such.

Mrs. Powell and I visited the Tool Rooms out on the platens and in the fabrication shop, and the following plan was submitted:

The women will be employed in each Tool Room for companionship. When these two are thoroughly trained, they will be divided and two green tool room checkers placed with them, and so on until all Tool Rooms are manned. Second, a women's supervisor be hired for the night shift. Her job will be something of a walking supervisor, checking the dispositions of the women employed in each Tool Room so as to prevent the clashing of personalities among theTool Room Checkers. Third, that all Tool Rooms be caged in, using hardware cloth, with only a small hole of sufficient size to permit the passing out of tools.

Mr. Gibson, Hull superintendent, objected to the women talking to the men on the job. A meeting was called for the women working on the platens to discuss this point. It was found that the men come to the women for the conversation, and they were instructed to leave the location if the men persisted in carrying on the conversation. Similar instructions will be issued by Mr. Gibson to the men working in the yard.

Mrs. Powell is a very capable woman in this work, and she has somewhat of an uphill job, due to the dislike of many foremen for having women on the job. Any assistance that can be given at an early date will be a definite help to the production in this yard.

Charles A. Britton, field representative

ESMWT-Misc. 12R

latest of these

Federal Security Agency
U. S. OFFICE OF EDUCATION
- Washington

ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING

Information Bulletin

Origin and Purpose - The Engineering, Science, and Management War Training program is the successor of the Engineering, Science, and Management Defense Training program of 1941-42, and the Engineering Defense Training program of 1940-41. ESMDT was established to provide short courses of college grade, designed to meet the shortage of engineers, chemists, physicists, and production supervisors in activities essential to the national defense. Under the program courses were conducted at 196 institutions at a cost of approximately $18,000,000. About 438,000 trainees were enrolled. The EDT program of 1940-41 was authorized to provide short courses of college grade in engineering only. These were given in 144 engineering institutions with enrollments of about 120,000. The cost of EDT was approximately $6,140,000.

Present Status - On June 30, 1942, in Public Law 647 - 77th Congress, 2nd Session, a sum of $30,000,000 was appropriated to continue the training of engineers, chemists, physicists, and production supervisors for war service throughout the fiscal year ending June 30, 1943.

Organization of Courses - Tax-exempt colleges and universities offering recognized degrees with majors in engineering, chemistry, physics, or production supervision, are eligible to participate in Engineering, Science, and Management War Training, usually called ESMWT. Before a course is organized, the sponsoring college or university determines the need for the contemplated training through consultation with nearby industries and the ESMWT regional adviser for the area concerned, and prepares an estimate of the probable number and qualifications of those available for the training. If conditions are favorable, one or more short courses are designed to prepare available trainees for the jobs in which a shortage was found.

Pertinent information, including estimates of costs, is sent to the U. S. Office of Education in a formal proposal to give each course that is planned. Those proposals that meet all legal, educational, and practical standards are approved, and instruction may begin as soon thereafter as qualified trainees can be enrolled. Additional proposals may be submitted as other training needs are established.

Types of Instruction - Regional differences in facilities and in war training needs dictate wide variations in the courses offered. Some are designed to prepare persons for new fields of work; others to fit those already employed in war activities for more difficult and responsible assignments. Classes may meet on the college campus or elsewhere -- many institutions are conducting courses simultaneously in several cities. All classes receive personal instruction from qualified teachers, however, except for a few specialized correspondence courses in the subject matter of mathematics and physics which are offered to prepare high-school teachers to conduct courses in those subjects. Some courses require the full time and attention of those enrolled; others are given after working hours for the benefit of employed persons. The time required to complete a course varies from a few weeks to several months, depending upon the extent and nature of the training. Subjects range from basic courses, such as engineering drawing and precision inspection, to refined specialties, such as geometrical optics and the X-ray diffraction analysis of metals. In general, the war training needs of an area determine the courses offered there, but some courses are conducted to meet Nation-wide needs of the armed forces and government war production activities.

Although all instruction under ESMWT is of college grade, it is not a substitute for regular courses of study leading to degrees. Obviously, the equivalent of an undergraduate curriculum of at least four years cannot be compressed into a training course of a few months duration.

Selection of Trainees - Although ESMWT courses are available without restriction as to age, sex, race, or condition of employment, prospective trainees must be employable at the kind of work to which the training is directed, and must meet the prerequisites for the course. These vary with the complexity of the subject and the purpose of the training. In general, a high school education is the minimum qualification for admission to ESMWT classes; certain of the more advanced subjects, by their nature, require from one to four years of previous college study. When the number of applicants exceeds available accommodations, selection of those best qualified to meet the purpose of the course must be made.

Regularly enrolled college students may not be admitted to any ESMWT course unless they intend, upon its completion, to enter war employment or the armed forces and do not intend to reenroll in college within the next academic year.

Costs - The Federal Government pays the cost of instruction. No tuition or fees are required of ESMWT enrollees, therefore. Trainees must pay for textbooks and minor supplies, however, and they must defray their own living and transportation expenses. In some courses, small deposits to assure the proper use and return of institutional property are required.

Selective Service - The effect, if any, of enrollment in or completion of an ESMWT course upon the status of a man who is registered under the Selective Service Act can be determined only by his Selective Service Local Board in consideration of his individual circumstances.

Placement - Jobs cannot be guaranteed those who successfully complete ESMWT courses. The training is designed to meet immediate and prospective war needs, however; and the facilities of college placement bureaus, the U. S. Employment Service, and the U. S. Civil Service Commission will be utilized in finding placements for trainees. The individual colleges and universities can best advise prospective trainees concerning employment opportunities for those completing specific courses.

Where to Apply - Because full responsibility for the conduct of approved courses and for the selection and admission of trainees rests with the institution, and because local personnel needs of war activities will determine what instruction is offered in any area, inquiries concerning available courses, their content, duration, and prerequisites should be addressed to the ESMWT institutional representative at one or more of the cooperating institutions. That official can, also, give advice concerning recommended texts and dates on which courses start. Upon request, the U. S. Office of Education will furnish a list of participating institutions.

how much of this do you want - Return 2 BG

Training-Within-Industry program

Extracts from TWI weekly News Letter -

James W. Irwin, assistant to the President, Monsanto Chemical Co. and his assistant, Miss Loretta Moushey, director of personnel for women, have taken up with District 17 company plans for the induction and training of women throughout the entire Monsanto setup. They will use JIT in connection with their various training problems. Mr. Irwin states that their plants in the East which have made use of JIT have found it very useful and speak of it most favorably.
- Sept. 12, 1942, p. 3.

Management, Kaiser Shipbuilding Corporation, in pursuance of its new policy is announcing that no foreman, supervisor, or other employee in similar classification, will be considered for promotion unless he first has been certified as a competent JIT instructor.
- Sept. 12, 1942, p. 5

Scores of New York factories, faced with a critical shortage of skilled workers, have been able to cut the breaking-in period for new employees by 40 to 75 percent through the aid of the TWI... The program, which was set up to assure a continuous flow of supervisors, foremen and skilled mechanics and to develop effective in-plant training systems, had provided training for 3,300 key men and women in New York industries, ranging from aviation to shirtmaking, in the last nine months. (New York Times)
- June 13, 1942, p. 3

Laundry Age, in its July issue, gives an extensive story about JIT and points out that there is a right way of going about a job, whether it is making an airplane part or pressing a shirt. The laundry run by the American Institute at Joliet, Ill, has adopted the program and is now applying TWI fundamentals to teaching laundry workers: "Department heads are really enthusiastic about it and are taking a great deal more interest in training, particularly of new girls."
- August 1, 1942, p. 6

Mr. Conover, assistant director, TWI, says "There are no special training problems presented by women, no change made in any of the training program we set up when women come into the classes." However, the TWI representative always calls attention to special occupational hazards for women, to safety clothing for them such as caps for their hair (if necessary), and to avoidance of heavy lifting.

Western Electric, Westinghouse, Bendix, and Kingsbury Ordnance (Ind.) are a few of the plants where JIT has been given where women supervisors have been in these classes.

At present TWI is training 60,000 supervisors in the 9 service commands of the Offices of the Services of Supply (7 services); there are some 650,000 employees in this branch of the War Department. TWI is also has its program in General Accounting Office and in Federal Security Agency. Claudia Minds and Martha Mooney are among the instructors giving the courses.

Robinson



MORE PRODUCTION THROUGH TRAINING

WOMEN'S BUREAU
FEB 26 1942
DEPARTMENT OF LABOR

The

TRAINING WITHIN INDUSTRY PROGRAM

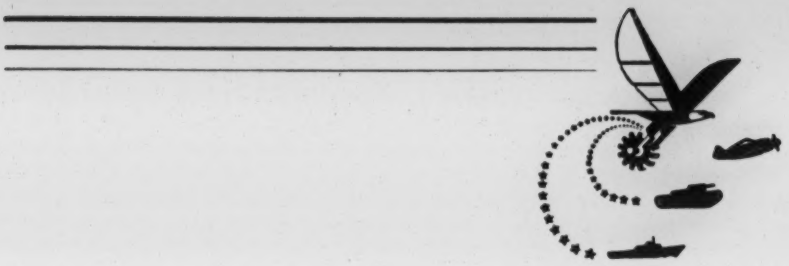
{January, 1942}

TRAINING WITHIN INDUSTRY

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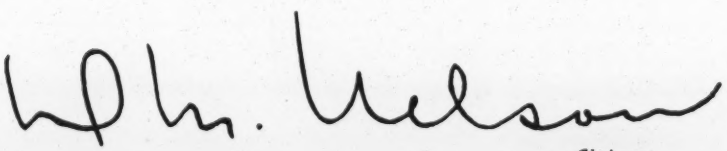
WPB

LABOR DIVISION



WE must build fleets of ships where we built one ship before; thousands of planes where we made a few dozen . . . myriads of tanks, guns, and all other weapons to defend democracy and back up our men in uniform. They will be produced in time ONLY if all wheels of American industry are properly turned by huge numbers of people, including millions now engaged in nonwar efforts.

"Old and new workers will do the right kind of job——*on time*——when given the right kind of training in the shortest possible time."



Chairman.

WAR PRODUCTION BOARD

The PROGRAM

The Office of Production Management established the Training Within Industry Program—staffed by training and personnel experts borrowed from industry—to assist defense contractors and subcontractors in meeting increased needs for skilled workers and supervisors.

Underlying PURPOSE of the "TWI" activity is:

> ***To assist defense industries to meet their manpower needs by training within industry each worker to make the fullest use of his best skill up to the maximum of his individual ability, thereby enabling production to keep pace with defense demands.***

Training Within Industry deals particularly with industry's own personnel responsibilities. Special attention is devoted to:

1. *UPGRADING* of all classes of personnel as their experience and abilities warrant, through planned job progression, job rotation, and intensive supplementary instruction both on and off the job. Each plant should take stock of the talent and experience of its own personnel before employing new men.

•

2. Development of *PRODUCTION SPECIALISTS* through intensive instruction *on the job* according to basic operations.

•

3. Development of all-around *SKILLED MECHANICS* through trades apprenticeship, in accordance with Federal standards, separate from production worker training, for the purpose of developing a predetermined, limited number of all-around journeymen mechanics.

•

4. Development of *SUPERVISORS* through careful selection, assignment of supervisory duties of increasing responsibility, and provision for related organized help through discussions and conferences under both plant and outside auspices; also the development of technical and other management assistants.

•

Training Within Industry renders specific ADVISORY ASSISTANCE to defense industries in inaugurating programs which they carry on within their own plants, at their own expense. There is no authority to enter a plant on any basis other than with management's cooperation.

●

HOW "TWI" ASSISTS DEFENSE INDUSTRY

Four general types of assistance apply in most cases and are being adapted *to fit conditions in each specific plant:*

A. Help in the *analysis of training needs.*

B. Aid in *setting up a program* within the plant to meet its needs.

C. *Transmit experience of other employers* who have met their training problems. This is cleared through "TWI" headquarters and its field organization.

D. Aid in the most *effective use of tax-supported Government agency services*, such as State and Federal employment services, vocational and trade schools, engineering colleges, NYA, WPA, CCC. Only through interpreting job requirements and the needs of industry to those agencies and gaining their closest coordination can maximum preemployment education and experience be furnished, as well as related supplementary instructions for employed workers.

●

RELATED SOURCES OF TRAINING

Training outside of industry includes preemployment and supplementary instruction. This part of the program is being provided for by Vocational Education for National Defense through public and private schools and by Engineering, Science, and Management Defense Training courses in colleges.

National Youth Administration, Work Projects Administration, and Civilian Conservation Corps also offer opportunities for preemployment work experience insuring better preparation for productive work in defense industries.

All these are of vital interest to industry and the closest kind of cooperation must be continuously maintained with them. Of utmost importance is that the industries served participate actively with the schools in setting up entrance standards, so that all who complete the school training will be acceptable for employment. It is also important that the numbers of persons so specially trained be not greatly in excess of the needs of the industries served.

The POLICY *approved by both Management and Labor*

"LEARN BY DOING — PRODUCE WHILE LEARNING"

In this emergency, as well as in more normal times, it is good American practice and efficient business to have each worker make the fullest use of his best skill up to the maximum of his individual ability. Only through such use of the intelligence and skill of the Nation's manpower will production keep pace with defense needs.

1. Additional workers will not be trained unless the available unemployed of equal skill have been absorbed or none are available locally.

2. There are normal losses from among skilled workers due to advancement into supervisory positions, changes to other occupations, sickness, death, and retirement. These losses go on continuously, and it is necessary to bring along well-trained workers to replace them. In addition, there is need to make up for the lack of apprentice training during the past 10 years. These are the reasons why organized apprenticeship programs are so important now.

There are two important phases of apprentice training:

Definitely planned program of experience, scheduled and assigned step by step to enable the apprentice over a predetermined time to acquire skill in increasingly difficult kinds of work in a trade. For every skilled job there is related technical matter, much of which can best be taught off the job. To be effective, this related instruction must be very closely tied into the current job experience. Practice, related theory, and technical knowledge must go hand in hand. Workers, employers, and technical educators should collaborate in determining what shall be included in this instruction and how it can best be related to the work experience.

The proportion of apprentices to be trained can best be determined in local areas in numbers and programs agreed upon in joint conferences between management and interested groups of employees or by agreements arrived at by collective bargaining units.

3. In a less formal way, many workers acquire a breadth of experience by learning one job at a time and becoming skilled in that, and advancing to a higher grade of work when opportunity permits. In an upgrading program the time cannot be definite; it is controlled by available opportunities, depending upon production programs and specific vacancies as they occur. This differs from an apprenticeship program where the opportunity is controlled by advance agreement. Therefore, while craftsman experience may be gained by an apprentice in from 3 to 4 years, it may take the production specialist two or three times as long, or longer, to acquire corresponding skill and versatility through an upgrading program.

In times of rapid expansion when there is a shortage of skilled workers, there is no choice but that of using inexperienced workers from other kinds of work or young people without any work experience but with good orientation background gained in public vocational schools during preemployment training. Through intensive instruction they must then be brought to their highest skill on a limited operation in the shortest possible time. Advancement

into more skilled work should always be made from among employees of longer experience on jobs which are good foundations for the higher skills. Attempts should not be made to replace skilled workers by narrowly skilled specialists.

This puts upon management a two-fold responsibility:

> Foremen, instructors, and experienced workers must assist less experienced workers in acquiring new skills; and they should see that employees who have the desire and capacity for advancement be not kept indefinitely on jobs requiring skill in single operations.

4. Apprenticeship, upgrading, and supervisory training programs within industry are greatly implemented by making available opportunities for individuals to get instruction and related knowledge which enable them to fit themselves for advancement. Whether these facilities are made available by public educational institutions, employers or organized labor groups, it is essential that there be continuous consultation between students, management, and educators. Only through such cooperation can the instruction be of immediate practical value.

Such philosophy, such practices, and such consultation should result in well-balanced training programs, and bring about an orderly and an effective approach to creating and maintaining a supply of competent workers available to meet the rapidly increasing needs of defense industry.

W. F. Rentschler
United Aircraft Corporation.

R. Randall Irwin
Lockheed Aircraft Corporation.

C. E. Skinner
United States Rubber Co.

W. S. Marshall
Westinghouse Electric and Manufacturing Co.

E. C. Davison
International Association of Machinists.

K. T. Ode
The Falk Corporation.

Edward F. Leder
Steel Workers Organizing Committee.

Walter P. Reuther
United Automobile Workers of America.

John Green
Industrial Union of Marine and Shipbuilding Workers of America.

E. J. ROBESON
Newport News Shipbuilding and Dry Dock Co.

M. H. Hedges
International Brotherhood of Electrical Workers.

John F. Rooney
Operative Plasterers and Cement Finishers International Assn.

THE ADVISORY COMMITTEE ON TRAINING OF THE LABOR DIVISION, OPM, AS OF APRIL 1941

The ORGANIZATION

Administrative Staff

C. R. DOOLEY, Director
Walter Dietz, Associate Director
William Conover, Assistant Director
M. J. Kane, Assistant Director
William F. Patterson, Chief of Apprenticeship
(U. S. Dept. of Labor)

Training Specialists

H. H. Blomeier
L. W. Emerson
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George Jaquet
William K. Opdyke

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Ching, C. S.	United States Rubber Co.	New York, N. Y.
Davison, E. C.	International Association of Machinists	Washington, D. C.
Golden, Clinton	Steel Workers Organizing Committee	Pittsburgh, Pa.
Green, John	Industrial Union of Marine & Shipbuilding Workers of America	Camden, N. J.
Hedges, Marion	International Brotherhood of Electrical Workers	Washington, D. C.
Irwin R. R.	Lockheed Aircraft Corporation	Burbank, Calif.
Marshall, W. G.	Westinghouse Electric & Manufacturing Co.	Pittsburgh, Pa.
Ode, K. F.	The Falk Corporation	Milwaukee, Wis.
Reuther, Walter P.	United Automobile Workers of America	Detroit, Mich.
Rooney, John E.	Operative Plasterers & Cement Finishers International Association	Washington, D. C.
Sobey, Maj. Albert	General Motors Institute	Flint, Mich.

Headquarters Consultants

Gates, Allen B.	Eastman Kodak Co.	Rochester, N. Y.
Mann, C. R.	American Council on Education	Washington, D. C.
Moore, Louise	U. S. Office of Education	Washington, D. C.
Sobey, Maj. Albert	General Motors Corporation	Flint, Mich.
Via, G. G.	Newport News Shipbuilding & Dry Dock Co.	Newport News, Va.
Viteles, Morris S.	Philadelphia Electric Co.	Philadelphia, Pa.
Whiteside, Bartley	Wright Aeronautical Co.	Paterson, N. J.

HEADQUARTERS
Fourth St. and Independence Ave. SW.
WASHINGTON, D. C.

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes ten or more consultants who are not listed

DISTRICT	Office Address—	Representative and Assistant—
1	**Northern New England** Maine, Massachusetts, Vermont, New Hampshire Room 1033, Park Square Building, **Boston,** Mass. (Hubbard 0380)	**Clarence G. McDavitt,** New England Telephone & Telegraph Co. Wayne E. Keith, Associate Representative Gilbert H. Tapley, Assistant Representative John H. Frye, Assistant Representative
2	**Southern New England** Connecticut, Rhode Island Room 513, 152 Temple Street, **New Haven,** Conn. (6-5186)	**Ernest A. Stowell,** Underwood Elliott Fisher Co. A. E. Whitehill, Assistant Representative
3	**Upstate New York** New York State (exclusive of Metropolitan New York)	**D. J. Hoosa,** Acting Representative Raymond T. Murray, Acting Assistant Representative (See District 4 below)
4	**Metropolitan New York** Room 2026, 11 West 42d Street, **New York,** N. Y. (Penn. 6-0486)	**D. J. Hoosa,** The Texas Co. Raymond T. Murray, Assistant Representative
5	**New Jersey** Room 601, 605 Broad Street, **Newark,** N. J. (Mitchell 2-1114)	**Glenn L. Gardiner,** Forstmann Woolen Co. Arthur H. Myer, Assistant Representative Clifton H. Cox, Assistant Representative
6	**Eastern Pennsylvania and Delaware** Room 2301, 12 South 12th Street, **Philadelphia,** Pa. (Walnut 6820)	**H. W. Jones,** The Atlantic Refining Co. Clarence N. Cone, Assistant Representative
7	**Maryland** Room 3106, Baltimore Trust Building, **Baltimore,** Md. (Plaza 1654)	**C. R. Houk, Jr.,** Rustless Iron & Steel Corporation Henry T. Douglas, Assistant Representative
8	**Atlantic Central** Virginia, North and South Carolina Raleigh Building, Fayetteville and Hargett Streets, **Raleigh,** N. C. (2-3306)	**George G. Arthur,** The Champion Paper & Fibre Co. Grover S. Tome, Assistant Representative
9	**Southeastern** Georgia, Florida, Alabama, Mississippi, Central and Eastern Tennessee Georgia School of Technology, 225 North Avenue NW., **Atlanta,** Ga. (Hemlock 6890)	**J. E. McDaniel,** Georgia School of Technology James Ira Teat, Assistant Representative
10	**Ohio Valley** Southern Ohio, Southern West Virginia, Kentucky Room 840, Union Trust Bldg., **Cincinnati,** Ohio. (Cherry 3740)	**Paul Mooney,** Kroger Grocery and Baking Co. Walter P. Hildebrand Assistant Representative
11	**Western Pennsylvania** (except Erie County) and Northern West Virginia Room 360, Administration Bldg., Carnegie Institute of Technology, **Pittsburgh,** Pa. (Mayflower 2600)	**C. S. Coler,** Westinghouse Electric & Manufacturing Co. Birl E. Shultz, Assistant Representative
12	**Northern Ohio** (except Lucas County) and Erie County, Pa. Room 797, Union Commerce Bldg. 925 Euclid Avenue, **Cleveland,** Ohio. (Cherry 2984)	**Oscar Grothe,** White Sewing Machine Co. Lowell O. Mellen, Assistant Representative Raymond G. James, Assistant Representative

Advisers

Districts 1 to 12, inclusive

Labor Advisers—	Management Advisers—	DISTRICT
Joseph J. Kelleher, Worcester Industrial Union Council J. Arthur Moriarity, Boston Typographical Union	Harry H. Kerr, Boston Gear Works, Inc. Everard Stubbs, Fellows Gear Shaper Co.	1
J. H. DeCantillon, International Association of Machinists Thomas Kearney, Electrical Workers Union	Carl A. Gray, Greenby Manufacturing Co. Richmond Viall, Brown & Sharpe Mfg. Co.	2
(To be appointed)	(To be appointed)	3
Thomas J. Lyons, N. Y. State Federation of Labor Gustave A. Strebel, N. Y. State Industrial Union Council	R. E. Gillmor, Sperry Gyroscope Company, Inc. J. C. Ward, Jr., Fairchild Engine & Airplane Corporation	4
Peter J. Flynn, Industrial Union of Marine & Shipbuilding Workers of America Carl L. Gylling, International Association of Machinists	Thomas R. Jones, American Type Founders, Inc. George E. Stringfellow, Thomas A. Edison, Inc.	5
Anthony Martinez, Steel Workers Organizing Committee Carl Bersing, Philadelphia Industrial Union Council Charles Sehl, International Association of Machinists David Williams, Pennsylvania Federation of Labor	Earl Sparks, Metal Manufacturing Association L. B. F. Raycroft, Electric Storage Battery Co.	6
Frank Bender, State Director, C. I. O. F. N. Kershaw, International Association of Machinists	Alonzo G. Decker, Sr., The Black & Decker Mfg. Co. Stewart Cort, Bethlehem Steel Co.	7
E. L. Sandefer, Director, C. I. O. T. A. Wilson, N. C. Industrial Commission	Edward J. Robeson, Jr., Newport News Shipbuilding & Dry Dock Co. Frederick W. Symmes, Union Buffalo Mills Co.	8
Paul R. Christopher, Tennessee Industrial Union Council Dewey L. Johnson, Georgia Federation of Labor	Ben Sinclair, Georgia Power Co. James F. Vance, Tennessee Coal, Iron, & Railroad Co.	9
John J. Hurst, Central Labor Council (Another Labor Adviser to be appointed)	Lewis M. Crosley, The Crosley Corporation George A. Seyler, The Lunkenheimer Co.	10
Clinton Golden, Steel Workers Organizing Committee William G. Short, International Brotherhood of Electrical Workers	W. G. Marshall, Westinghouse Electric & Manufacturing Co. Henry D. Scott, Wheeling Steel Corporation	11
Elmer F. Cope, Steel Workers Organizing Committee Albert Dalton, Cleveland Building and Construction Trades Council	Ray S. Livingstone, Thompson Products Co. Warner Seeley, Warner-Swasey Co.	12

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes ten or more consultants who are not listed

DISTRICT	Office Address—	Representative and Assistant—
13	**Michigan** and Lucas County in Ohio 610 Boulevard Bldg., 7310 Woodward Ave. **Detroit,** Mich. (Trinity 1-5520)	**M. M. Olander,** Owens-Illinois Glass Co. O. F. Carpenter, Associate Representative Carl Wheaton, Assistant Representative Elvin W. Day, Assistant Representative
14	**Indiana** (except Lake and Porter Counties) Room 1428 Circle Tower Building, **Indianapolis,** Ind. (Market 9411)	**E. H. Adrianse,** Eli Lilly and Co. Herbert Kessel, Assistant Representative
15	**Illinois** (except 3 counties adjacent to St. Louis, Mo.) and 28 counties in Wisconsin and 2 counties in Indiana Room 1441, 20 North Wacker Drive, **Chicago,** Ill. (Andover 1744)	**Paul A. Mertz,** Sears Roebuck & Co. John J. Lamb, Assistant Representative
16	**North Central** Wisconsin (except 12 counties), Minnesota, North Dakota, South Dakota, Iowa, Nebraska Room 1800, Rand Tower, **Minneapolis,** Minn. (Bridgeport 7591)	**Ernest L. Ohrich,** Munsingwear Inc. J. R. Rothenberger, Assistant Representative A. B. Algren, Assistant Representative
17	**South Central** Missouri, Kansas, Oklahoma, Arkansas, Western Tennessee, and 3 counties in Illinois Room 603, Shell Building, **St. Louis,** Mo. (Central 4206)	**A. Earl Wyatt,** Laclede Gas Light Co. C. T. Cardwell, Assistant Representative
18	**Gulf District** Texas and Louisiana Room 3201, Gulf Building, **Houston,** Tex. (Fairfax 9842)	**Harold Fletcher** (Acting) Hughes Tool Co. Tracy T. Word, Assistant Representative
19	**Mountain District** Colorado and Wyoming Room 518, U. S. National Bank Building, 817 Seventeenth Street, **Denver,** Colo. (Keystone 4151-536)	**George M. Kirk,** Colorado Fuel & Iron Corporation Arthur E. Lawrence, Assistant Representative
20	**Pacific Southwest** Southern California, Arizona, New Mexico Room 452, Roosevelt Building, 727 West Seventh Street, **Los Angeles,** Calif. (Trinity 2104-2105)	**William K. Hopkins,** Columbia Pictures Corporation Charles H. Fishburn, Assistant Representative
21	**Pacific Central** Northern California, Nevada, Utah Room 702, Newhall Bldg. 260 California Street, San Francisco, Calif. (Exbrook 0369)	**Alexander R. Heron,** Crown Zellerbach Corporation Aylwin Probert, Assistant Representative
22	**Pacific Northwest** Washington, Oregon, Idaho, Montana Room 957, Smart Building, Fourth and University Sts., **Seattle,** Wash. (Elliot 6404)	**Maj. Gen. H. G. Winsor,** Puget Sound Power & Light Co. Leighton H. Steele, Assistant Representative
	Oregon District Room 1006, Bedell Bldg., **Portland,** Oreg. (Broadway 0380)	Laurin E. Hinman, Assistant Representative

Advisers

Districts 13 to 22, inclusive

Labor Advisers—	Management Advisers—	DISTRICT
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James C. Robb, Congress of Industrial Organization Roy Creasey, International Brotherhood of Electrical Workers	J. M. Smith, RCA Manufacturing Co., Inc. Frank S. O'Neil, Link Belt Co.	14
George E. Mischeau, Steel Workers Organizing Committee	Harold F. North, Swift & Company L. J. Parrish, A. O. Smith Corporation	15
Sander Genis, Congress of Industrial Organization George Lawson, Minnesota Federation of Labor	Harry W. Clark, Hugo Manufacturing Co. Fred Crosby, American Hoist & Derrick Co. C. L. Mandelert, Chippewa Falls Woolen Mill Co. Herbert J. Miller, Minnesota State Resources Commission Gust Olson, Jr., Deere & Co. Karl Vogel, Omaha Steel Works	16
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Simeon Hyde, Congress of Industrial Organization A. S. McBride, American Federation of Labor	W. L. Childs, Reed Roller Bit Company Harold Fletcher, Hughes Tool Co. David Harris, Humble Oil Co.	18
Martin Cahill, Wyoming Federation of Labor Floyd F. Miles, Labor Counsellor	Harold F. Silver, Silver Engineering Works, Inc. Charles O. Voigt, The Stearns-Roger Mfg. Co.	19
Cornelius J. Haggerty, California Federation of Labor James G. Thimmes, Steel Workers Organizing Committee	David T. Babcock, Blythe and Co., Inc. Garner A. Beckett, Riverside Cement Co. Arthur H. Young, California Institute of Technology	20
J. Scott Milne, International Brotherhood of Electrical Workers	Adam S. Bennion, Utah Power & Light Co. James R. Moore, Moore Dry Dock Co. T. S. Petersen, Standard Oil Co. of California	21
Richard C. Francis, Congress of Industrial Organization H. S. McIlvaigh, Tacoma Central Labor Council	Ernest R. Hinton, Olympia Steel Works W. Walter Williams, Continental, Inc.	22
William Dalrymple, Congress of Industrial Organization D. E. Nickerson, Oregon Federation of Labor	Morris H. Jones, Jones Lumber Co. Ross McIntyre, International Sales & Produce Co.	

High Spots in the "TWI" program

1 This is *not a policy-making program.* It does not determine whom an employer shall hire, how many, or when.

2 It is a practical *advisory service*, dealing with training methods and procedures. It disseminates the latest, factual information based on *current experience of industry.*

3 It is *concerned only with workers on pay rolls* where training is carried out right on the job within plants. *Workers learn by doing—produce while learning.*

4 It shows employers how to get skilled operation *from all grades of workers* by analysis of jobs and intensive instruction.

5 It aids in the development of *practical plans for upgrading workers* to higher skilled jobs as rapidly as their ability warrants.

6 It renders specific aid in the *development of supervisors* so that they become better managers.

7 Services of the Federal Committee on *Apprenticeship* are closely related to the in-plant "TWI" activities for the more *rapid development of all-around skilled craftsmen.*

8 It works for *closer cooperation* of the local governmental agencies carrying on placement, pre-employment training, and supplementary instruction, so that the employers' needs for definite skills are met.

9 The entire "TWI" program is carried on with the advice and *backing of both labor and management.*

10 Training Within Industry service is rendered by *experienced industrial personnel and training experts loaned to OPM by industry itself.*

CONTACT YOUR NEAREST "TWI" DISTRICT OFFICE FOR COMPLETE DETAILS

U. S. GOVERNMENT PRINTING OFFICE 16—[illegible]

M & R
your copy

JOB INSTRUCTOR TRAINING

one of the services made available to all war production contractors and sub-contractors by the **TRAINING WITHIN INDUSTRY SERVICE** *of the* **WAR MANPOWER COMMISSION**



This is a plan that puts into effect the procedure outlined by the Training within Industry Service Bulletin 2-C entitled, "HOW TO INSTRUCT A MAN ON THE JOB."

It is specially prepared to help all those who instruct workers on the job -- group leaders, sub-foremen, lead men, job setters, experienced workers. It is useful to all who direct the work of others -- from foremen to works manager.

Who originated it

The principles of job instruction set forth in the Plan have been used in American industry for 25 years. They were first tried out during World War I.

The present condensed Plan was worked out by a group of the nation's leaders in industrial training, loaned by their companies to the war Manpower Commission for this purpose, along with Federal and State representatives for Vocational Education.

How it operates

The training is given in 5 two-hour sessions, at any periods convenient to the companies and those who attend. It can be given at any time, day or night, on any days, Sunday included.

How many in groups

Best results are obtained with groups of 12. With groups composed of more than 13, there is not sufficient time for actual individual practice. This Plan is not a discussion of theory but a plan where participants spend most of their time actually DOING the instructing job.

Who will conduct the sessions

The 5 two-hour sessions will, in most cases, be led by experienced industrial men, serving part time, who have been specially trained to do this job. The quality of the work of these "War Production Trainers" is kept at a high standard through supervision from headquarters.

What does it cost

The training is given without cost to all companies holding war production contracts or subcontracts. The trainers receive a modest hourly compensation out of Federal funds, administered by the State Vocational Board.

How to get started

All that is necessary to get started is to notify the District Representative of the Training within Industry Service, or one of the District Representative's Training Consultants.

Alschedule supervisor will call promptly to meet with the Plant Superintendent, Personnel Manager or some designated person, to complete all arrangements for the first group, and subsequent groups.

TRAINING WITHIN INDUSTRY

WAR MANPOWER COMMISSION
Bulletin #2-C

Washington, D. C. May, 1942

HOW TO INSTRUCT A MAN ON THE JOB

You are about to instruct a man how to do his job. This is very important to the man - and to you - and to national war production.

Perhaps the man has been with you for years. Perhaps he has been transferred to you. Or maybe he is green - starting his first job. Or perhaps he has had long experience in a non-defense industry and is starting his new work on war production.

Here are some ideas that may help you. They were worked out by others, just like yourself, who had the same job to do. Study them. Use them. They are easy to follow.

C. R. Dooley, Director
Training within Industry

What You Want to Do.

Go back in your own memory. Remember how you felt the first day on a new job? - the time you were"stumped"by a new"wrinkle"on the job? - the time when you caused some scrap or re-work? - the time you got hurt? - the times when the boss corrected you and your work? Perhaps you liked the way he did it - or perhaps - you didn't?

Any worker assigned to you feels the same way. He wants to make a good showing. You realize this. You are interested in four things:

1. Having the new worker come up to the quality and quantity requirements of production as quickly as possible.

2. Avoiding accidents which will injure the worker.

3. Avoiding damage to machines or equipment.

4. Spoiling as little work as possible.

How You Can Do It.

Most of us just "jump right in" and start instructing or correcting a workman without much thought or planning. Perhaps you do the same.

- you know the job so well that you've forgotten the things that "stump" the learner

- you know it so well, that you don't plan how to "put it over"

- you know it so well that you don't pick out the "key points" - the "knacks" - the things that make or break the operation

To instruct a man right takes just a little extra time at the moment, but it saves hours and days of time later on, and prevents a large part of the scrap, spoiled work and accidents. The following plan is simple and easy to follow. Furthermore, it works.

- before instructing, there are four GET READY points for you to watch. You can do them in a few minutes.

- when instructing there are FOUR BASIC STEPS to follow. They really are no different than what you may now be doing. But they help you do it well and thoroughly. At least they have helped thousands of others.

HOW to GET READY to Instruct.

Here are the four GET READY points you should take care of before instructing:

1. Have a time table.
   - how much skill do you want the man to have?
   - how soon?

   When faced with a "breaking in" problem, don't say what all too many of us say - "IT TAKES TIME - - -", or "HE JUST HAS TO LEARN".

   Say to yourself instead: "HOW MUCH TIME - - -?"

   Here is an easy way to do it. Answer to yourself this statement: "__(employee)__ should be able to __(do what job)__ and do it __(how well)__ by __(what date)__."

   Better yet, put down the names of your men on a piece of paper. Set yourself some dates when you are going to try to have them able to do the jobs they need to know. Time is short. Have a time table for yourself and your men.

2. Break down the job.

   You know that there is one right way to do every job. You know too that there are a few "key points" in every operation that make or break it. If these key things are done right, the whole operation is right. If any one of them is missed the operation is wrong.

   - if you put the job over to the worker with these key points made clear, he will really "get it".

   - he will do the operation right the first time.

   - He won't be "fighting" the work - making mistakes - getting hurt.

   There is an easy, quick way to get the job clearly outlined in your mind. Fill out a "Breakdown Sheet", (sample enclosed)

for each of your operations. It only takes three to five minutes. This is for your own use. It is not to be given to the worker.

3. Have everything ready,

- the right tools, equipment and materials.

When you so much as "touch" a job in front of a worker, set the correct example. Don't use the wrong tool. Don't fumble. Don't excuse. Don't miss a trick. When you have everything right, he is more likely to do the same.

4. Have the work place properly arranged,

- just as the worker is expected to keep it.

The same thing applies here as above. You must set the correct example. Put his bench, desk, stock pile or wherever he is to work, in proper order, before you start to put over the job to him. He won't do it if you don't do it.

HOW TO INSTRUCT.

Here is what you should do every time you instruct a man or correct his work:

STEP I. PREPARE the worker to receive the instruction.

- put him at ease. Remember he can't think straight if you make him embarrassed or scared.

- find out what he already knows about this job. Don't tell him things he already knows. Start in where his knowledge ends.

- get him interested. Relate his job or operation to the final product, so he knows his work is important.

- put him in the right position. Don't have him see the job backwards or from any other angle than that from which he will work.

STEP II. PRESENT the operation.

-tell him, show him, illustrate, ask.

-"put it over" in small "doses". He (the same as all of us) can't catch but six or eight new ideas at one time and really understand them,

-make the "key points" clear. These will make or break the operation - maybe make or break him.

- be patient - and go slowly. Get accuracy now - speed later.

- repeat the job and the explanation if necessary.

STEP III. TRY OUT his performance.

- have him do the job, but watch him.

- then have him do it again, but have him EXPLAIN to YOU what he is doing and why. All of us find it easy to observe motions and not really understand what we are doing. YOU want him to UNDERSTAND.

- have him explain the key points.

- correct his errors, but don't bawl him out or indicate that he is "thick" or "dumb".

- continue doing all this until YOU know HE knows. He may have to do the job half a dozen times.

STEP IV. FOLLOW-UP.

- put him on his own. He has to "get the feel" of the job by doing it himself.

- tell him to whom he should go if he needs help. make this definite - yourself or someone you designate. The wrong person might give him a "bum steer".

- check him frequently - perhaps every few minutes at the start, to every few hours or few days later on. Be on the lookout for any incorrect or unnecessary moves. Be careful about your taking over the job soon, or too often. Don't take it over at all if you can point out the helps he needs.

- get him to look for key points as he progresses.

- taper off this extra coaching until he is able to work under normal supervision.

Use this plan. You will find it amazing that such greatly improved results can come from such a simple plan.

Use it, or whatever part of it applies, every time to put over a new operation, check a man's work, or change a work procedure.

IF THE WORKER HASN'T LEARNED, THE INSTRUCTOR HASN'T TAUGHT!

JOB BREAK-DOWN SHEET FOR TRAINING MAN ON NEW JOB

PART _____ OPERATION _____

IMPORTANT STEPS IN THE OPERATION Step: A logical segment of the operation when something happens to ADVANCE the work	KEY POINTS Key point: Anything in a step that might Make or break the job Injure the worker Make the work easier to do, i. e., "knack," "trick," special timing, bit of special information

JOB BREAK-DOWN SHEET FOR TRAINING MAN ON NEW JOB

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What it is designed to accomplish

Typical problems in war production plants which the Plan has helped solve.

Production problems

Deliveries delayed because of errors and mistakes of men making the parts.
Men don't know their jobs.
Mix-ups in trucking service.
Parts returned by other departments because they were not made right.
Operators have special problems because of engineering changes.
Poor planning.
Men have difficulty in getting up to production on new type equipment.
Aisles too congested.
Excessive wear and tear on equipment.

Safety problems

Safety equipment not properly used.
Material not piled properly.
Poor shop housekeeping.
Dontt know safety rules.
Men don't know hazards of their jobs.
Men get careless.
Minor injuries not reported.

Quality problems

Meeting inspection standards.
Too much scrap or re-work.
Jigs and gauges not properly used.
Not following specifications.
Too much left to operator's judgment.

Personnel problems

Men leave to other plants - couldn't "get the hang" of the job.
New men lack experience in mechanical things.
Lack interest in the work.
Men want transfers - think they can "make out" better on other jobs.
Claim to have good experience but don't "come through."
Too much time to get up to production.
Instructed wrong way.
Can't get experienced men any more.
Men get discouraged learning the job.

Most managers say that somewhere around 80% of their shop problems could be solved -- or at least HELPED -- if they had a better trained work force.

How About Yours?

WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY SERVICE

District Offices

For information or advisory assistance concerning the training of supervisors while on the job, apply to the Training Within Industry Service district office nearest you.

Atlanta, Ga., Georgia School of Technology, 225 North Ave., NW. (Hemlock 6890)

Baltimore, Md., Room 3106, Baltimore Trust Bldg. (Plaza 7180)

Boston, Mass., Room 1035, Park Square Bldg. (Hubbard 9380-1)

Chicago, Ill., Rm. 2600, Civic Opera Bldg., 20 No. Wacker Drive (Andover 3600)

Cincinnati, Ohio, Room 703, Union Trust Bldg. (Cherry 3740)

Cleveland, Ohio, 4th Floor, Union Commerce Bldg., 925 Euclid Ave. (Cherry 7900)

Denver, Colo., Room 717, Kittredge Bldg., 511 Sixteenth St. (Tabor 3173)

Detroit, Mich., 1st Floor, 15 Boulevard Bldg., 7310 Woodward Ave. (Trinity 1-5500)

Houston, Tex., Room 3201, Gulf Bldg. (Capital 7201)

Indianpolis, Ind., Room 1408, Circle Tower Bldg., (Market 8511)

Los Angeles, Calif., Room 755, Western Pacific Bldg., 1031 South Broadway (Richmond 0311)

Minneapolis, Minn., 536 Midland Bank Bldg. (Maine 3244)

Newark, N. J., Room 601, 605 Broad Street (Mitchell 1-1114)

New Haven, Conn., Rm. 515, 152 Temple St. (6-5186)

New York, N. Y., Room 2026, 21 West Forty-second St. (Murray Hill 3-6805)

Philadelphia, Pa., Rm. 1740, 12 South Twelfth St. (Locust 3400)

Pittsburgh, Pa., Room 360, Administration Bldg., Carnegie Institute of Technology (Schenley 2925)

Portland, Oreg., Room 2210, Bedell Building (Atwater 7241)

Raleigh, N. C., Raleigh Bldg., Fayetteville and Hargett Sts. (2-3306)

St. Louis, Mo., Room 603, Shell Building (Central 4206)

San Francisco, Calif., Room 702, Newhall Bldg., 260 California St. (Exbrook 0369)

Seattle, Wash., Rm. 960, Stuart Bldg., Fourth and University Sts. (Eliot 6404)

C. R. DOOLEY
Director

WALTER DIETZ
Associate Director

6-5370

29722

ADVANCE RELEASE

For MONDAY MORNING Papers, March 23, 1942

WAR PRODUCTION BOARD

Labor Division WPB 632

Instruction of new workers in safety practices "will help to avoid accidents which interrupt war production," Sidney Hillman, Labor Director of the War Production Board, declared today in releasing a bulletin on safety training to war contractors and Labor Division field men.

"The employment of millions of additional workers on war production jobs which are new to them," he said, "together, with the possibility of mistakes induced by fatigue resulting from longer hours of work in some war industries, have contributed to the 1941 increase in industrial accidents.

"Proper training in safety will do much to save lives, prevent injuries, and boost war output," Hillman stated.

The bulletin, prepared by the Training-Within-Industry Branch of the WPB Labor Division, in cooperation with the Labor Department's Labor Standards Division, is titled "Safety On The Job For The New Employee."

Pointing out that "industrial safety is vital to war work," Channing R. Dooley, chief of the Training-Within-Industry Branch, declares in a forward:

"All accidents interfere with the flow of work. Many result in damage to machinery, equipment, or work. Some involve injuries. Injuries result in at least temporary loss of services when full-time work of every employee is needed...

"If safety is handled as an 'after-thought,' either in induction or instruction, the employee may consider it apart from his regular duties. Safety is not something just for a meeting, not just a humane attitude--it is fundamental in getting out maximum war production."

Suggesting approaches for plant supervisors instructing new workers on safety, the bulletin states:

"In many war production plants conditions should frankly be described to the employee as 'hazardous.' Make the distinction between 'dangerous' and 'hazardous.' Where explosions can be caused by carelessness, only the thorough following of a rigid safety program can keep a hazardous plant from being a dangerous one.

"Safety is a continuous job. It is necessary to follow up constantly to make sure that the man whose speed is increasing is not making time through dangerous short cuts. Such short cuts, though spectacular at the moment, will not speed production. Short-cuts may point out the need for a better way to do a job--but a shorter way cannot be tolerated unless it is safe."

Excerpts from the bulletin follow:

"Information concerning the company's safety program and policies should be given at the same time as information concerning general policies. Stress the measures to guard machines and minimize physical hazards, as well as management's interest in the workers' well-being....

"When the employee is being given information about his work, point out the hazards to which he will be exposed: (a) in the type of work to which he will be assigned; (b) as a result of work being performed in his immediate vicinity; and (c) as a result of operations or processes carried on in the department. The supervisor should stress the precautions which the employees must take to avoid injury, and emphasize individual responsibility for safety and the advantage to the employee....

"In many localities, safety has suffered from a sentimental approach. Management may feel that its job is handled by the statement that 'unsafe practices will not be tolerated.' Some companies look on safety as a public relations policy (a few believe that a plant safety program ranks along with factory picnics—devices to build good will.)...

"Safety is a production problem. Every accident, whether or not it involves human injury, is an interruption to the orderly flow of production. Manpower loss is a block to production which is almost impossible to make up. Planning instruction on the basis of the safe way and emphasizing hazards along with key points in breaking in a man on a new job are realistic foundations for a plant safety program which is undertaken on the basis of 'good business in war time,' not just because 'it's the right thing to do'"....

~~22044~~

ADVANCE RELEASE: FOR SUNDAY MORNING PAPERS, FEB. 6, 1942

WAR PRODUCTION BOARD

Labor Division

WPB-163

A keystone of labor's war production effort, job training, is being reinforced rapidly, Sidney Hillman, WPB Labor Director, said today in announcing that 20,898 "lead men" and supervisors in 938 plants with 1,500,000 employes, have been trained to instruct war workers.

He stated that the latest report of the Training-Within-Industry Branch of the WPB's Labor Division further showed that another 125,000 "lead men" already are scheduled for TWI's streamlined "job instructor training program."

"Under this program," Mr. Hillman said, "foremen are taught, right in the plants, how to break in green men on skilled jobs and experienced men on new jobs quickly and efficiently.

"Our goal is to develop 200,000 such supervisors by July 1 in factories from coast to coast. This army of supervisors will teach essential skills to the millions of workers now required for present war plants and those being converted to war production."

Training studies, surveys and recommendations have been made by TWI representatives for more than 2,000 war production contractors and sub-contractors employing more than 3,000,000 workers, Hillman said.

There have been 538 panel consultants loaned to TWI, by both management and labor groups who work part-time out of 22 district offices in the United States. Total field personnel numbers 763 people, under the direction of Channing R. Dooley, Chief TWI, WPB Labor Division. Each office is under direct supervision of an experienced personnel authority, with two or three full-time paid assistants.

MVR

WAR PRODUCTION BOARD

Labor Division

For Immediate Release
February 6,1942

WPB - 163

A keystone of labor's war production effort, job training, is being reinforced rapidly. Sidney Hillman, WPB Labor Director, said today in announcing that 20,898 "lead men" and supervisors in 938 plants with 1,500,000 employees, have been trained to instruct war workers.

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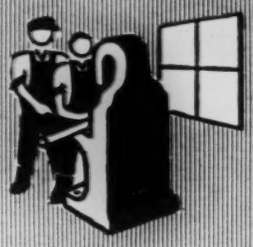
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MVR



MORE PRODUCTION THROUGH TRAINING

The

TRAINING WITHIN INDUSTRY PROGRAM

August 1942

Bulletin No. 1

TRAINING WITHIN INDUSTRY

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WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY PUBLICATIONS

Bulletins

1. **The Training Within Industry Program.**—Service to war production contractors, policy of TWI, headquarters and field personnel.

2. **Upgrading.**—Moving employees within an organization to develop and use each to the maximum of his abilities.

2A. **Training the Production Worker.**—Successful industrial practice in getting new workers into production with minimum training time.

2B. **How to Prepare Instructors to Give Intensive Job Instruction.**—Giving organized knowledge of production operations and methods of instruction.

2C. **Helping the Experienced Worker to Break In a Man on a New Job.**—How to improve the training done by the man on the job.

3. **Expediting the Training of Skilled Tradesmen Through Apprenticeship.**—The development of all-round craftsmen in the emergency.

4. **Strengthening the Managerial Organization.**—Planned development for the building of a strong supervisory organization.

4A. **Expanding the Managerial Organization.**—Upgrading and training of supervisors.

4B. **Improving Supervisory Practice.**—Specific steps to take in increasing the ability of supervisors to meet their responsibilities.

5. **Training Aids.**—Training time can be shortened through the use of reliable supplementary methods and materials.

6. **Tying in Preemployment Training with On-the-Job Training.**—Sound relationships between public instruction and factory training shorten training.

6A. **Supplementary Instruction for Upgrading.**—Planning and integrating of off-the-job instruction.

7. **Increasing War Production Through Employment of Women.**—Good planning and preparation needed for the changing employment picture.

8. **Introducing the New Employee to the Job.**—Getting the new man off to the right start.

8A. **Safety on the Job for the New Employee.**—An integral part of induction and instruction.

Examples of Successful Training in War Production Industry

Precision Lens Grinding.—Volume production obtained through specializing work.

How Idle Machinery Is Being Used for Training.—Preemployment training at night.

Meeting the Need for Skilled Workers in a New Airplane Engine Plant.—Planned training for a mass-production establishment.

Training for Quick Production in Heavy Manufacture.—Producing while learning is feasible, even with workers entirely new to industry.

Organizing Manpower for a Small-Arms Ammunition Plant.—Restricted.

Upgrading in a Large Steel Corporation.—Staff training activities.

Training for the Electrical Department of a Shipyard.—Expanding the electric shop force.

All of the above publications are available through the nearest Training Within Industry District Office—see list on pages 8–11.

Available Through the Government Printing Office

(Send orders to Superintendent of Documents)

Job Instruction (Western Electric Company), 10 cents.

An Introduction to Shipbuilding (Bethlehem Steel Company), 20 cents.

The

PROGRAM

THE Training Within Industry Program was established in August 1940 by the National Defense Advisory Commission and was continued under the Office of Production Management and then the War Production Board. By Presidential order on April 18, 1942, Training Within Industry was transferred to the Federal Security Agency to function as a part of the new War Manpower Commission which now handles all problems of labor supply and training.

Underlying PURPOSE of "TWI" activity is:

> ***To assist war production industries to meet their manpower needs by training within industry each worker to make the fullest use of his best skill up to the maximum of his individual ability, thereby enabling production to keep pace with war demands.***

Training Within Industry deals exclusively with industry's own training responsibilities. It recommends that all war production plants, consistent with the terms of their existing labor agreements, give balanced and appropriate attention to the following phases of in-plant training:

1. *UPGRADING* of all classes of personnel as their experience and abilities warrant, through planned job progression, job rotation, and intensive supplementary instruction both on and off the job. Each plant should take stock of the talent and experience of its own personnel before employing new men and women.

•

2. Development of *PRODUCTION SPECIALISTS* through intensive instruction on the job in basic operations.

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3. Development of all-round *SKILLED MECHANICS* through trade apprenticeship, in accordance with Federal standards, separate from production worker training, for the purpose of developing a predetermined, limited number of all-round journeyman mechanics.

•

4. Development of *SUPERVISORS* through careful selection, assignment of supervisory duties of increasing responsibility, and provision for related organized help through discussions and conferences, under both plant and outside auspices, dealing with methods of instruction, methods of developing better ways of doing a job, methods of improving working relationships, and knowledge of responsibilities.

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HOW "TWI" ASSISTS WAR PRODUCTION INDUSTRY

It maintains a field force with offices in 22 districts throughout the United States, as listed in this bulletin. It is staffed by training and personnel specialists, many of whom are loaned by their companies for part-time or full-time work.

•

Training Within Industry renders specific ADVISORY ASSISTANCE to war production industries in inaugurating and improving programs which they carry on within their own plants, at their own expense. There is no authority to enter a plant on any basis other than with management's cooperation. Four general types of advisory assistance, listed below, apply in most cases and are adapted to fit conditions in each specific plant:

1. Identification of training needs and recommendation of training programs to fill such needs.
2. Aid in setting up a program within a plant to meet its needs.
3. Clearing house on experience of other employers who have met their training problems. This is cleared through "TWI" headquarters and its field organization.
4. Recommending the most effective use of tax-supported employment and training agencies of the Government. Only through interpreting job requirements and the needs of industry to these agencies and interpreting their facilities to industry can maximum results be obtained from preemployment and supplementary instruction.

•

In addition to the above advisory assistance, the Training Within Industry Division conducts specific intensive training programs for the development of potential, newly appointed, and experienced supervisors and training directors. The programs for supervisors require 10 hours, and for training directors 48 hours.

Job Instruction Training gives the supervisor practice in how to "break in" men on new jobs.

Job Methods Training shows the supervisor how to simplify and improve methods of doing a job.

Job Relations Training gives the supervisor pointers and practice in how to work with people in a way that gains cooperation and promotes teamwork.

Training of Training Directors gives intensified coaching in how to operate and improve complete, plant-wide training programs.

The

POLICY

approved by both Management and Labor

"LEARN BY DOING — PRODUCE WHILE LEARNING"

IN this emergency, as well as in normal times, it is good American practice and efficient business for each worker to make the fullest use of his best skill up to the maximum of his individual ability. Only through such use of the intelligence and skill of the Nation's manpower can production keep pace with war needs.

1. Additional workers should not be trained unless locally available workers of equal skill have been absorbed.

2. There are normal losses from among skilled workers due to advancement into supervisory positions, changes to other occupations, sickness, death, and retirement. These losses go on continuously, and it is necessary to bring along well-trained workers to replace them. In addition, there is need to make up for the lack of apprentice training during the past 10 years. These are the reasons why organized apprenticeship programs are so important now.

There are two important phases of apprentice training:

(*a*) A definitely planned program of experience, scheduled and assigned step by step to enable the apprentice over a predetermined time to acquire skill in various kinds of skilled work in a trade.

(*b*) For every skilled job there is related technical matter, much of which can best be taught off the job. To be effective, this related instruction must be very closely tied into the current job experience. Practice, related theory, and technical knowledge must go hand in hand. Workers, employers, and technical educators should collaborate in determining what shall be included in this instruction and how it can best be related to the work experience.

The proportion of apprentices to be trained can best be determined in local areas in numbers and programs agreed upon in joint conferences between management and interested groups of employees or by agreements arrived at by collective bargaining units.

3. In a less formal way, many workers acquire a breadth of experience by learning one job at a time and becoming skilled in that, and advancing to a higher grade of work when opportunity permits. In an upgrading program the time cannot be definite; it is controlled by available opportunities, depending upon production programs and specific vacancies as they occur. This differs from an apprenticeship program where the opportunity is controlled by advance agreement. Therefore, while craftsman experience may be gained by an apprentice in from 3 to 4 years, it may take the production specialist two or three times as long, or longer, to acquire corresponding skill and versatility through an upgrading program, and, of course, many will remain in a specialized occupation.

In times of rapid expansion when there is a shortage of skilled workers, there is no choice but that of using inexperienced workers from other kinds of work or young people without any work experience but with good orientation background gained in public vocational schools during preemployment training. Through intensive instruction on the job they must then be brought to their highest skill on a limited

operation in the shortest possible time. Advancement into more skilled work should always be made from among employees of longer experience on jobs which are good foundations for the higher skills. Attempts should not be made to displace all-round skilled workers by narrowly skilled specialists.

4. Where there is a collective bargaining agreement the employees' elected representatives should work with management in the establishment of plant training programs.

5. Management has a twofold responsibility: Foremen, instructors, and experienced workers must assist less experienced workers in acquiring new skills; and as far as possible they should see that employees who have the desire and capacity for advancement be not kept indefinitely on jobs requiring skill in single operations. The supervisor therefore has the responsibility of developing his men and should acquire special skill in instruction just as he must acquire the skill of maintaining good relations with his men and the skill of improving technical production.

Apprenticeship, upgrading, and supervisory training programs within industry are greatly implemented by making available opportunities for individuals to get instruction and related knowledge which enable them to fit themselves for advancement. Whether these facilities are made available by public educational institutions, employers or organized labor groups, it is essential that there be continuous consultation between workers, management, and educators. Only through such cooperation can the instruction be of immediate practical value.

Such philosophy, such practices, and such consultation should result in well-balanced training programs, and bring about an orderly and an effective approach to creating and maintaining a supply of competent workers available to meet the rapidly increasing needs of war industry. Training Within Industry promotes these policies.

APPROVED ON AUGUST 21, 1942
MANAGEMENT-LABOR POLICY COMMITTEE
WAR MANPOWER COMMISSION

R. Conrad Cooper,
Wheeling Steel Corporation.

H. A. Enochs,
The Pennsylvania R. R. Co.

Frank P. Fenton,
American Federation of Labor.

John P. Frey,
American Federation of Labor.

Lt. Col. Kenneth Gardner,
N. Y. Shipbuilding Corp.

R. E. Gillmor,
Sperry Gyroscope Co., Inc.

Clinton S. Golden,
United Steel Workers of America.

John Green,
Industrial Union of Marine and Shipbuilding Workers of America.

R. Randall Irwin,
Lockheed Aircraft Corporation.

George Masterson,
United Association of Journeymen Plumbers and Steamfitters.

Walter P. Reuther,
United Automobile, Aircraft, and Agricultural Implement Workers of America.

C. J. Whipple,
Hibbard, Spencer, Bartlett & Co.

Mr. Fenton, Mr. Gillmor, Mr. Irwin, and James J. Matles, of the United Electrical and Radio Workers (alternate for Mr. Golden), are members of the Advisory Subcommittee for liaison between the Training Within Industry Division and the Management-Labor Policy Committee.

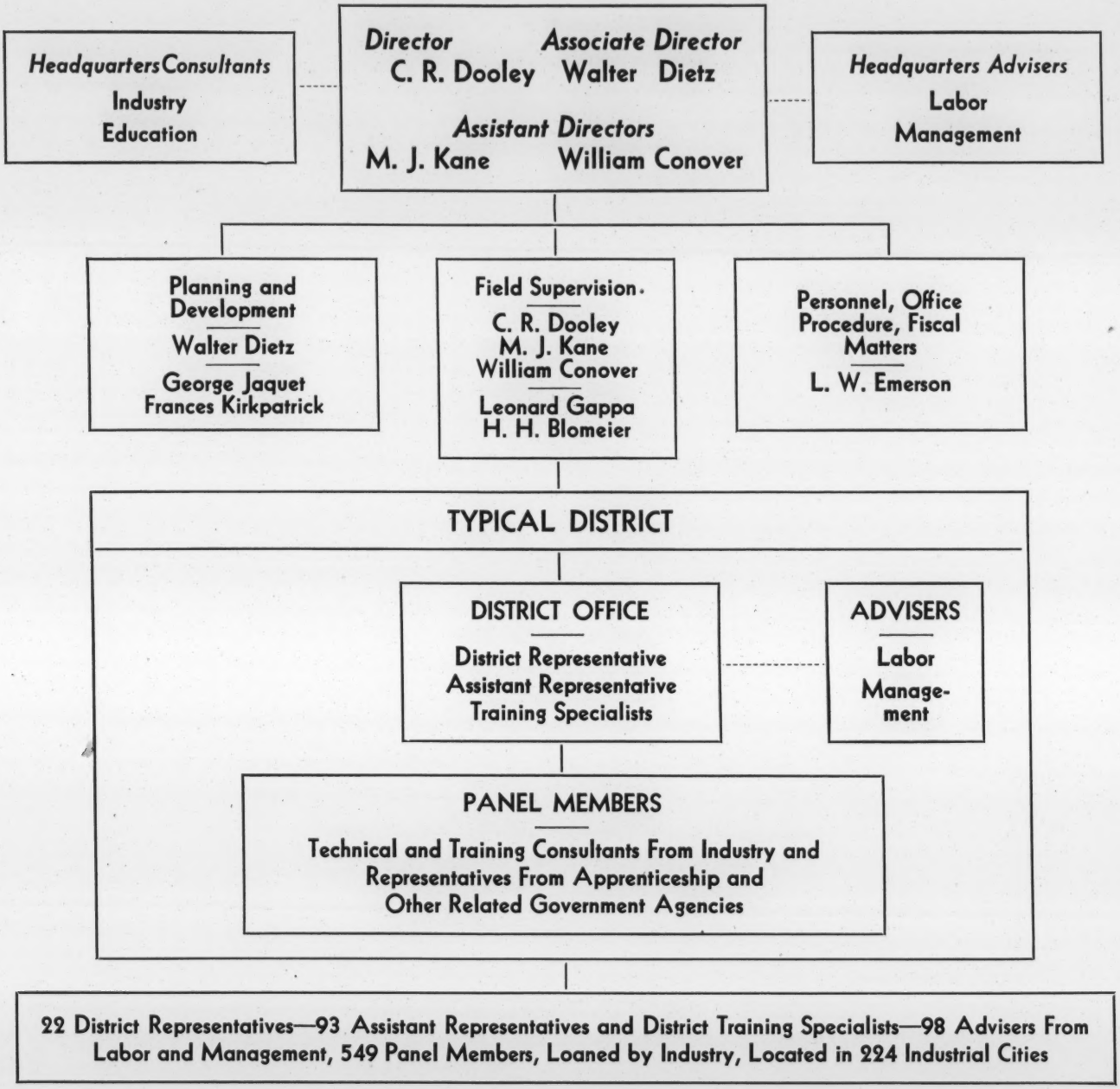
Since September 1940, Training Within Industry has been guided by a Committee of Labor and Management Advisers which issued the first "TWI" Policy statement in April 1941. The above policy statement continues the policy originally established. The members of the original committee were: M. F. Burke, C. S. Ching, E. O. Davidson, Clinton S. Golden, John Green, M. H. Hedges, R. Randall Irwin, W. G. Marshall, K. F. Ode, Walter P. Reuther, E. J. Robeson, and John E. Rooney.

WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY

ORGANIZATION

Headquarters: Room 4762, Social Security Building
Fourth St. and Independence Ave. SW., Washington, D. C.
Executive 4660



22 District Representatives—93 Assistant Representatives and District Training Specialists—98 Advisers From Labor and Management, 549 Panel Members, Loaned by Industry, Located in 224 Industrial Cities

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes ten or more consultants who are not listed

DISTRICT	Office Address	Representative
1	**Northern New England** Maine, Massachusetts, Vermont, New Hampshire Room 1035, Park Square Building, **Boston,** Mass. (Hubbard 0380)	**Harry H. Kerr,** Boston Gear Works, Inc.
2	**Southern New England** Connecticut, Rhode Island Room 513, 152 Temple Street, **New Haven,** Conn. (6-5186)	**Joseph Eugene Moody,** Hat Corp. of America
3	**Upstate New York** New York State (exclusive of Metropolitan New York)	**Sterling W. Mudge,** Acting Representative
4	**Metropolitan New York** Room 2026, 11 West 42nd Street, **New York,** N. Y. (Murray Hill 3-6805)	**Sterling W. Mudge,** Socony Vacuum Oil Co.
5	**New Jersey** Room 601, 605 Broad Street, **Newark,** N. J. (Mitchell 2-1114)	**Glenn L. Gardiner,** Forstmann Woolen Co.
6	**Eastern Pennsylvania and Delaware** Room 1740, 12 South 12th Street, **Philadelphia,** Pa. (Locust 3400)	**H. W. Jones,** The Atlantic Refining Co.
7	**Maryland** Room 3106, Baltimore Trust Building, **Baltimore,** Md. (Plaza 8170)	**James H. Kahlert,** Bendix Radio Corp.
8	**Atlantic Central** Virginia, North and South Carolina Raleigh Building, Fayetteville and Hargett Streets, **Raleigh,** N. C. (2-3306)	**George G. Arthur** The Champion Paper & Fibre Co.
9	**Southeastern** Georgia, Florida, Alabama, Mississippi, Central and Eastern Tennessee Georgia School of Technology, 225 North Avenue NW., **Atlanta,** Georgia. (Hemlock 6890)	**J. E. McDaniel,** Georgia School of Technology
10	**Ohio Valley** Southern Ohio, Southern West Virginia, Kentucky Room 703-705, Union Trust Building, **Cincinnati,** Ohio. (Cherry 3740)	**Paul Mooney,** Kroger Grocery and Baking Co.
11	**Western Pennsylvania** (except Erie County) and Northern West Virginia. Room 360, Administration Building, Carnegie Institute of Technology, **Pittsburgh,** Pa. (Mayflower 2600)	**C. S. Coler,** Westinghouse Electric & Manufacturing Co.
12	**Northern Ohio** (except Lucas County) and Erie County, Pa. 4th Floor, Union Commerce Building, Chester and Ninth Streets, **Cleveland,** Ohio. (Cherry 5975)	**Oscar Grothe,** White Sewing Machine Co.

Advisers

Districts 1 to 8, inclusive

Labor Advisers—	Management Advisers—	DISTRICT
Joseph J. Kelleher, Worcester Industrial Union Council J. Arthur Moriarity, Boston Typographical Union	Clarence G. McDavitt, New England Tel. & Tel. Co. Everard Stubbs, Fellows Gear Shaper Co.	1
J. H. DeCantillon, International Association of Machinists Thomas Kearney, International Brotherhood of Electrical Workers	Carl A. Gray, Grenby Manufacturing Co. Richmond Viall, Brown & Sharpe Mfg. Co.	2
(To be appointed)	(To be appointed)	3
Thomas J. Lyons, N. Y. State Federation of Labor Gustave A. Strebel, N. Y. State Industrial Union Council John J. Brennan, Alternate, Building and Construction Trades Council	D. J. Hoose, The Texas Co. R. E. Gillmor, Sperry Gyroscope Co., Inc. J. C. Ward, Jr., Fairchild Engine & Airplane Corporation	4
Peter J. Flynn, Industrial Union of Marine & Shipbuilding Workers of America Carl L. Gylling, International Association of Machinists	Thomas R. Jones, American Type Founders, Inc.	5
Anthony Martinez, Steel Workers Organizing Committee Carl Bersing, Philadelphia Industrial Union Council Charles Sehl, International Association of Machinists David Williams, Pennsylvania Federation of Labor	Earl Sparks, Metal Manufacturing Association L. B. F. Raycroft, Electric Storage Battery Co.	6
Frank J. Bender, State Director, CIO F. N. Kershaw, International Association of Machinists	Alonzo G. Decker, Sr., The Black & Decker Mfg. Co. Stewart Cort, Bethlehem Steel Co. Charles R. Hook, Jr., Rustless Iron and Steel Co.	7
E. L. Sandefer, Director, CIO T. A. Wilson, North Carolina Industrial Commission	Edward J. Robeson, Jr., Newport News Shipbuilding & Dry Dock Co. Frederick W. Symmes, Union Buffalo Mills Co.	8
Paul R. Christopher, Tennessee Industrial Union Council Dewey L. Johnson, Georgia Federation of Labor	Ben Sinclair, Georgia Power Co. James F. Vance, Tennessee Coal, Iron & Railroad Co.	9
John J. Hurst, Central Labor Council	Lewis M. Crosley, The Crosley Corporation George A. Seyler, The Lunkenheimer Co.	10
Clinton Golden, Steel Workers Organizing Committee William G. Short, International Brotherhood of Electrical Workers	W. G. Marshall, Westinghouse Electric & Manufacturing Co. Henry D. Scott, Wheeling Steel Corporation	11
Albert Dalton, Cleveland Building and Construction Trades Council	Ray S. Livingstone, Thompson Products Co. Warner Seeley, Warner-Swasey Co.	12

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes two or more consultants who are not listed

DISTRICT	Office Address	Representative
13	**Michigan** and Lucas County, Ohio 15 Boulevard Building, 1st floor, 7310 Woodward Avenue, **Detroit,** Mich. (Trinity 1-5500)	**M. M. Olander,** Owens-Illinois Glass Co. **O. F. Carpenter,** Associate Representative
14	**Indiana** (except Lake and Porter Counties) Room 1428, Circle Tower Building, **Indianapolis,** Ind. (Market 9411)	**A. E. Sinclair,** P. R. Mallory & Co.
15	**Illinois** (except 3 counties adjacent to St. Louis, Mo.) and 28 counties in Wisconsin, 2 counties in Indiana, and 1 county in Iowa Room 2600, 20 North Wacker Drive, **Chicago,** Ill. (Andover 3600)	**Paul A. Mertz,** Sears Roebuck & Co.
16	**North Central** Wisconsin (except 28 counties), Minnesota, North Dakota, South Dakota, Iowa (except 1 county), Nebraska 326 Midland Bank Building, **Minneapolis,** Minn. (Maine 3244)	**Ernest L. Olrich,** Munsingwear, Inc.
17	**South Central** Missouri, Kansas, Oklahoma, Arkansas, Western Tennessee, and 3 counties in Illinois Room 803, Shell Building, **St. Louis,** Mo. (Central 4206)	**A. Earl Wyatt,** Laclede Gas Light Co.
18	**Gulf District** Texas and Louisiana Room 3201, Gulf Building, **Houston,** Tex. (Capitol 7201)	**Harold Fletcher,** Hughes Tool Co.
19	**Mountain District** Colorado and Wyoming 7th Floor, 511 Sixteenth Street, Kittredge Building, **Denver,** Colo. (Tabor 3173)	**George M. Kirk,** Colorado Fuel & Iron Corp.
20	**Pacific Southwest** Southern California, Arizona, New Mexico 755 Western Pacific Building, 10315 Broadway, **Los Angeles,** Calif.	**William K. Hopkins,** Columbia Pictures Corp.
21	**Pacific Central** Northern California, Nevada, Utah Room 702, Newhall Building, 260 California Street, **San Francisco,** Calif. (Exbrook 0369)	**Alexander R. Heron,** Crown Zellerbach Corp.
22	**Pacific Northwest** Washington, Oregon, Idaho, Montana Room 957, Stuart Building, Fourth and University Streets, **Seattle,** Wash. (Elliot 9404) **Oregon District** Bedell Building, Room 1006, **Portland,** Oreg. (Broadway 0380)	**Maj. Gen. H. G. Winsor,** Puget Sound Power & Light Co.

Advisers

Districts 16 to 22, inclusive

Labor Advisers—	Management Advisers—	DISTRICT
John Reid, Michigan Federation of Labor Walter Reuther, United Automobile Workers of America	Willis H. Hall, Detroit Board of Commerce Frank Rising, Automotive Parts & Equipment Manufacturers, Inc.	13
James C. Robb, Congress of Industrial Organizations Roy Creasey, International Brotherhood of Electrical Workers	Henry C. Atkins, Jr., E. C. Atkins & Co. Lothair Teetor, The Perfect Circle Co.	14
George E. Mischeau, Steel Workers Organizing Committee Albert G. Fox, Sheet Metal Workers Union Local 115 Otto A. Jirikowic, International Association of Machinists Paul H. Steffes, United Auto Workers Local 75 Terry Kandal, Alternate, United Auto Workers Local 719	Harold F. North, Swift & Company L. J. Parrish, A. O. Smith Corporation. H. A. Schauer, Alternate, Hasco Valve Co.	15
Sander Genis, Congress of Industrial Organizations George Lawson Minnesota Federation of Labor	Harry W. Clark, Hugo Manufacturing Co. Fred Crosby, American Hoist & Derrick Co. C. L. Mandelert, Chippewa Falls Woolen Mill Co. Herbert J. Miller, Minnesota State Resources Commission Gust Olson, Jr., Deere & Co. Karl Vogel, Omaha Steel Works	16
Joseph P. Clark, Central Trades & Labor Union of St. Louis and vicinity A. F. Kojetinsky, Steel Workers Organizing Committee Lloyd M. McBride, Alternate, Steel Workers Organizing Committee Joseph A. Waldron, Alternate, Metal Polishers, Buffers, Platers & Helpers International Union	Wilbur B. Jones, St. Louis Chamber of Commerce Walter Siegerist, Medart Co.	17
Simson Hyde, Congress of Industrial Organizations A. S. McBride, American Federation of Labor	David Harris, Humble Oil Co.	18
Martin Cahill, Wyoming Federation of Labor Floyd F. Miles, Labor-Counsellor	Harold F. Silver, Silver Engineering Works, Inc. Charles O. Voigt, The Stearns-Roger Manufacturing Co.	19
Cornelius J. Haggerty, California Federation of Labor James G. Thimmes, Steel Workers Organizing Committee	David T. Babcock, Blythe & Co., Inc. Garner A. Beckett, Riverside Cement Co. A. H. Young, California Institute of Technology	20
J. Scott Milne, International Brotherhood of Electrical Workers Lee R. Smith, Regional Labor Relations Rep., War Production Board	James R. Moore, Moore Dry Dock Co. T. S. Petersen, Standard Oil Co. of California Julian F. Arntz, Bethlehem Steel Co.	21
H. S. McIlvaigh, Tacoma Central Labor Council D. E. Nickerson, Oregon Federation of Labor	Ernest R. Hinton Olympia Steel Works W. Walker Williams, Continental, Inc. Morris H. Jones, Jones Lumber Co. Ross McIntyre, International Sales & Produce Co.	22

High Spots in the "TWI" Program

1 This is *not a policy-making program.* It gives no consideration to whom an employer shall hire, how many, or when.

2 It is a practical *advisory service,* dealing only with training methods and procedures. It disseminates the latest, factual information based on *current experience of industry.*

3 It is *concerned only with workers on pay rolls* where training is carried out right on the job within plants. *Workers learn by doing—produce while learning!*

4 It shows employers how to *get skilled operators from all grades of workers* through intensive instruction at the job level.

5 It aids in the development of *practical plans for upgrading workers* to higher skilled jobs as rapidly as their ability warrants.

6 It renders specific aid to plants in the *development of foremen and leadmen* so that they become better supervisors.

7 "TWI" cooperates with the Apprentice-Training Service in promotion of attention to the development of all-round skilled tradesmen.

8 It works for *closer cooperation* between local industry and local governmental placement and training in order to meet employers' definite needs.

9 The entire "TWI" program is carried on with the active and *backing of both labor and management.*

10 Training Within Industry service is rendered by *experienced industrial personnel and training experts loaned to the War Manpower Commission by industry itself.*

CONTACT YOUR NEAREST "TWI" DISTRICT OFFICE FOR COMPLETE DETAILS

sent with letter 3/10/42 from Blanche S. Ka... who took the course. I was asking...

TRAINING COURSE IN INDUSTRIAL SUPERVISION

Authorized by the United States Office of Education and given at Mount Holyoke College in cooperation with Northeastern University June 22 to August 1, 1942

Return to Miss Nyswander

AIM

The war production program calls for increased man-power and the requirement of special training of women to replace men. The aim of this course is to supply these women in the field of industrial supervision. The students study the policies and practices prevailing today in leading American industries with reference to the employment of both men and women. The also learn the lessons to be drawn from Great Britain's experience in the employment of women in both World Wars and in training women for war work. They come to understand the significance of the reports of the British Health of Munitions Workers' Committee and those of the Industrial Service Section of Ordnance in the United States and value them all for the suggestions in forming programs under similar conditions.

CONTENT

On the factual side the course presents the minimum of "What Every Woman Supervisor Should Know." Three approaches to the subject matter are made as follows:

1. Through the responsibilities assumed and the techniques required by management.

2. Through the conditions of employment prescribed by Government, state and national.

3. Through attitudes, programs, and procedures in use by organized labor.

METHODS

The teachers are professional persons engaged in research and administration in the three fields with the greatest emphasis upon management. They present an analysis of the problems of industrial supervision and the background from which these problems emerge. A discussion method is pursued throughout and the instruction is informal. The reading includes case studies, Government reports, and those from other authoritative sources.

It is assumed that supervisors need to have a fairly wide acquaintance with machine-shop practice. For this reason students have the facilities for machine-shop instruction and practice for eight hours on each of the five Saturdays in the course. In addition to operation of standard machines, there is opportunity for acetylene welding in the well-equipped training center of the National Youth Administration in Holyoke.

The services of a teacher of statistics and the use of actual absentee records, obtained through the cooperation of an industrial relations manager, who is a member of the committee which formulated the plan for the course, enables the students to analyze causes of absenteeism and report upon them. Similarly, the cooperation of the U. S. Employment Service has made it possible for students to take actual registration under the supervision of a trained interviewer.

By these methods the students become familiar with actual situations and problems similar to those they will encounter as industrial supervisors.

OUTLINE OF COURSE

The course is developed in the following order.

PERSONNEL ADMINISTRATION

The place of a Personnel Department in the general organization of a manufacturing concern is studied. Variations in current practices are noted. Policies and procedures in connection with selecting new employees, uses made of testing, relations with the U. S. Employment Service, training programs and provisions for job security, promotion and counseling are all surveyed. Foreman training, time studies, job evaluation, and provisions for health and safety are discussed by authorities in these respective fields. Visits are made to the personnel departments of manufacturing concerns in the area to study lay-out, filing systems, and general equipment.

Topics under this head are studied in approximately the following order:

Development of specialized management of personnel

Early status of labor relations and passing of the old order

Need of functionalized personnel
- Line and staff organization
- Coordination with other staff organization

Technique of selection and placement
- Job analysis and standardization
- Selection of workers
- Interviewing
- Tests as an aid to selection

Methods of maintaining an efficient and stable labor supply
- Transfers
- Employee rating and lay-off
- Employee training
- Vacations
- Foreman training
- Wage administration
- Maintenance of standards in working conditions
- Union-management cooperation

INDUSTRIAL RELATIONS AND LABOR LEGISLATION

The interactions of industrial management and trade-union policies are studied. These include grievance procedures and the actual functioning of plans for union-management cooperation. Standards set by state and Federal labor laws are discussed as well as the administrative methods for maintaining them. The problems of exemptions in the war program and the questions raised by these exemptions receive special emphasis.

Topics under this head are taken up in approximately the following order:

The labor union set-up in the U.S.A.

Matters for joint union-management study and determination
- Wage systems
- Hours of work
- Operating control
- Health and safety

Complicating factors
- Impact of technology on employment
- Electricity and human labor

Paths to industrial peace
- Art of collective bargaining
- Development of leadership
- Administration of the contract
- Distribution of earnings
- Fruits of union-management cooperation in the industry council program

Government regulation of the conditions of employment
- State wage and hours laws
- Regulation of working conditions
- Workmen's compensation
- Role of the federalized United States Employment Service
- Administration of the Fair Labor Standards Act
- Administration of the National Labor Relations Act
- Administration of state labor laws and the problems of exemptions for expediting of the war program
- Role of the labor sections of the New Deal administrative agencies

SPECIAL PROBLEMS OF SUPERVISION

The responsibilities of the first-line supervisor in the employment of women are explored. These are studied in the light of changing conditions made by the war production program. Included among the problems selected for study are the following:

Uniforms and other protective measures

The question of transportation

Employment on the second shift

Stimulation of interest

Causes of industrial fatigue

Contributions of psychology to industry

Miscellaneous personnel services:
- Cooperative stores
- Employee magazines
- Rest rooms and locker rooms
- Recreational opportunities
- Handbooks and suggestion systems

INSTRUCTORS IN THE ESMDT COURSE

THOMAS C. ARMSTRONG, Industrial Relations Supervisor
Westinghouse Electric and Manufacturing Company
Springfield, Massachusetts

HELEN BAKER, Assistant Director, Industrial Relations Section
Princeton University, Princeton, New Jersey

BESS BLOODWORTH, Vice President in charge of Personnel
The Namm Company, Brooklyn, New York

JULIA CHAPIN, Principal Interviewer
U. S. Employment Service, Holyoke, Massachusetts

ALZADA COMSTOCK, Professor of Economics, Mount Holyoke College

DOROTHY DOUGLAS, Associate Professor of Economics, Smith College

WILLIAM F. DWYER, Supervising Inspector, Wage and Hour Division
U. S. Department of Labor, Boston, Massachusetts

HERVEY B. ELKINS, Division of Occupational Hygiene
Massachusetts Department of Labor and Industries

MARY GILSON, Special Mediation Representative
War Labor Board, Washington, D.C.

ELLSWORTH M. HERRICK, Regional Director
National Labor Relations Board, New York

AMY HEWES, Professor of Economics, Mount Holyoke College
Director, E.S.M.D.T. Course

JEAN KENNEDY, District Superintendent, U. S. Employment Service, New York

ASA S. KNOWLES, Dean, College of Business Administration
Northeastern University, Boston, Massachusetts

SEATON W. MANNING, Industrial Secretary, Boston Urban League

JENNIE MOHR, Supervisor of Women
Curtiss-Wright Company, Paterson, New Jersey

ELIZABETH NORD, Vice President
Textile Workers' Union of America, C. I. O., Providence, R. I.

KATE PAPERT, Director, Division of Women in Industry and Minimum Wage
New York Department of Labor

PAUL P. PIGORS, Industrial Relations Section
Massachusetts Institute of Technology

ANNA SULLIVAN, Organizer, National Staff, C. I. O.
Textile Workers Union of America, Holyoke, Massachusetts

ROBERT WATT, International Representative, A. F. of L.

January 2, 1942.

Colonel Frank McSherry,
Deputy Director of Labor Supply and Training,
Office of Coordinator of Health, Welfare
and Related Defense Activities,
Washington, D. C.

My dear Colonel McSherry:

My attention has been called to the Supplement No. 1 to Administrative Procedure governing conduct of national defense training programs of the Federal Security Agency and especially to paragraph 6 which states that "Except as may be authorized by the Office of Production Management, the training of girls for jobs in which they are not customarily employed will not be permitted on rough defense work projects." This regulation, I note, was approved by you. I realize that this bulletin was issued November 29, 1941 before we entered the war, but even at that time, the lack of trained women equipped to enter the war production industries was acute, therefore, I was very much surprised to read your statement about the training of girls.

The Women's Bureau has urged throughout the entire emergency period that women be trained now for the jobs that they eventually will be called upon to fill. Now that war has been declared, and the all-out production for which the President has called will mean double and treble the present production efforts, the use of women on jobs for which "they are not customarily employed" will be imperative. It seems to me absolutely essential that women be given the training now that will equip them to perform efficiently the work they will be required to do as the shortage of male labor develops.

In view of the changed conditions caused by the declaration of war, I sincerely hope that the policy relating to the training of girls as expressed in paragraph 6 of Supplement No. 1 may be reversed.

I am sending a copy of this letter to the other signers of the supplement.

Sincerely yours,

Mary Anderson, Director.

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Supplement No. 1 to ADMINISTRATIVE PROCEDURES GOVERNING CONDUCT OF NATIONAL DEFENSE TRAINING PROGRAMS OF THE FEDERAL SECURITY AGENCY

Subject: NYA - VE-ND DEFENSE WORK PROJECTS AND TRAINING

The purpose of this supplement is to clarify certain questions which have arisen in connections with the operation of National Youth Administration defense work projects and the organized shop training, provided by the vocational schools.

1. In order that the maximum benefit to national defense may be obtained from joint work experience and organized shop training programs, the closest coordination is essential. New NYA defense work projects will be established and approved only after a thorough analysis is made by the local NYA officials in conjunction with the local vocational school authorities and the local Employment Service to be sure that the following conditions are met:

a. That there is an actual need for the trainees upon completion of the course. Exceptions as to this may be made in those cases in which unlimited training is authorized by the Chief, Defense Training Branch, Labor Division, Office of Production Management.

b. That proper equipment and other plant facilities are available in either the NYA shop or a vocational school for developing the desired essential skills necessary for employment in defense industries.

c. That there are available qualified (occupationally and otherwise) supervisory and instructor personnel.

d. That there is an ample supply of NYA enrollees who possess the referral specifications necessary for employment in defense industries.

e. That the program of work experience and organized shop training, including a definite time schedule, is mutually agreed to by the NYA supervisor and the supervisor of Vocational Education.

NOTE: The National Office of the National Youth Administration will survey all existing youth work defense programs with a view to reorganizing projects where necessary in order that they will conform to the standards and requirements indicated herein.

2. Considerable misunderstanding has arisen in regard to the number of hours the enrollee is to devote to work experience and training during each month. It is essential that the enrollee devote 160 hours per month to work experience and organized shop training if he is to be paid from funds appropriated for the youth defense work program. There is no exception to this rule.

3. Except as hereinafter provided, the minimum number of hours per month in the schedule shall be 80 hours for work and 60 hours for organized shop training. The allocation of the remaining 20 hours required and the arrangement of the time schedule involving the full 160 hours will be determined by mutual agreement between the NYA supervisor and the supervisor of Vocational Education.

Exceptions to the above required minimums may be authorized as follows:

a. Exception from the established minimum of 80 hours of project work may be approved by the Washington office of the National Youth Administration when the work experience to be provided on the defense project is not geared to specific defense occupations, or is insufficient in amount, or when because of emergency circumstances the Office of Production Management may request it. In such cases, the number of hours of organized shop training provided by the State Board for Vocational Education shall be increased to produce a combined total of 160 hours per month.

b. Exception from the established minimum of 60 hours of organized shop training per month may be approved by the State Board for Vocational Education when in its opinion projects provide a sufficient amount of work geared to the development of skills essential for specific defense jobs. In such cases, the number of hours of project work shall be increased to produce a combined total of 160 hours per month.

4. In any case, the organized shop training shall be carried on in a shop approved under 1-b above, except that not more than 10 hours per month may be devoted to classroom instruction in related subjects.

5. NYA supervisors are responsible for referring all defense project workers to organized shop training as scheduled. Instructors should report absence or misconduct on the part of workers to the NYA supervisor. Failure to attend shop training or failure to do acceptable work will eliminate an enrollee from the defense work project.

6. Except as may be authorized by the Office of Production Management, the training of girls for jobs in which they are not customarily employed will not be permitted on youth defense work projects.

Signed:

J. W. Studebaker
John W. Studebaker, Commissioner
U. S. Office of Education

Aubrey Williams
Aubrey Williams, Administrator
National Youth Administration

Dated: November 29, 1941

Ewan Clague
Ewan Clague, Director
Bureau of Employment Security
Social Security Board

Approved:

Frank J. McSherry
Frank J. McSherry
Director of Defense Training

TRAINING WITHIN INDUSTRY

SECOND ANNUAL PROGRESS REPORT

September, 1942

In the two years spanning the defense period and almost one year of war, Training Within Industry has given advisory assistance, mapped training programs, provided training, or otherwise served 5,753 plants. In these establishments 5,604,990 men and women are employed. These plants include most of the large war production contractors of the country.

The promotion stage is practically over, and the organization is a going and growing concern. The problem now is "Production."

The national organization, through 22 district offices, serves 224 industrial areas. The headquarters office and all of the district offices are directed by volunteer training men from industry who serve without compensation, some of them on a part-time basis. The field work is performed by 647 training consultants drawn almost entirely from industry (generally part time) who serve without compensation, and a paid staff of 79 training specialists plus a clerical force of 100. Only 34 persons are at Headquarters and, of these, the Director, Associate Director, and two Assistant Directors are loaned by their companies.

POINTS OF EMPHASIS FOR THE COMING YEAR

Supervisors are a key point in expanding industry which, while it is adding thousands of new workers, is also constantly being pressed for greater output. Training Within Industry looks at the training of supervisors as being divided into five segments each represented by a specific need - two kinds of knowledge and three kinds of skills:

1. Knowledge of the Work - materials, machines, tools, processes, operations, products, technical skill, and information.

2. Knowledge of Responsibilities - policies, agreements, rules, regulations, safety, schedules, interdepartmental relationships.

It is necessary for every supervisor to know his job technically and then to have a clear understanding of his local plant authority and responsibilities. Such knowledge must be supplied locally by each plant or company because both of these kinds of knowledge are constantly changing.

3. Skill in Leading - understanding individuals, sizing-up situations, working with people, getting teamwork.

4. Skill in Planning - improving job methods to use materials, machines, tools, manpower - all to maximum effectiveness and minimum waste of time and material.

5. Skill in Instructing - breaking down jobs into simple operations, making the learner receptive, presenting the instruction, trying out his performance, following up for results.

These basic skills must be acquired individually. Practice and experience in using them enable both new and experienced supervisors to recognize and solve daily problems promptly.

Training Within Industry assists war production contractors in developing the skill of leading through its Job Relations Training program, the skill of planning through its Job Methods Training program, and skill in instructing through its Job Instruction Training program.

Confidence in how to proceed, and resourcefulness, not standardized solutions and rules, are developed; these enable supervisors to get good teamwork, to give better service, and to get out more production. In no other way can production be so quickly influenced and manpower conserved.

JOB INSTRUCTION TRAINING

Bringing about the use of Job Instruction Training by war production industry is the present greatest single accomplishment of Training Within Industry. This program has now reached over 5,000 war production plants in which over 5,000,000 persons work. Over 4,000 War Production Trainers have gone from plant to plant putting on this intensive 10-hour program, resulting in the training of 227,731 foremen and crew chiefs in how to give job instruction. The program has brought a realization of other needs and approaches, and also has made certain industries more cooperative with other government programs.

Supervisors are now being trained at the rate of 7,000 to 8,000 per week. By the end of 1942, Training Within Industry plans to bring the total of industrial foremen and crew chiefs training in how to break in men on new jobs up to 300,000. A quality review will reach most of the present Trainers, and Training Within Industry is also arranging definite plant follow-ups to insure maximum use of this method.

Training for the Services of Supply

Lieutenant General Somervell has directed all units in the Services of Supply to make Job Instruction Training available to all of

their supervisors. The government arsenals and other production plants employ over 600,000 civilians and these establishments are expanding rapidly. The Services of Supply will require supervisory training for more than 60,000 persons. T.W.I. is supplying Trainers from industry to do this job, and is scheduled to complete the Job Instruction Training program by December 31, 1942. The program will be followed immediately by Job Relations Training and Job Methods Training.

This training for the Services of Supply was already under way in a number of districts before General Somervell's order. A number of districts began last spring and in the summer to put on J.I.T. programs for ordnance plants, motor bases, Signal Corps laboratories, arsenals, proving grounds, Air Corps bases, and Quartermaster depots. The program is now being extended to all the Service Commands.

Cooperation with Government Agencies

Through the Civil Service Commission, Job Instruction Training has been spread to a number of government agencies. The groups in which this training has been started include Civil Aeronautics Administration, Federal Public Housing Authority, Federal Security Agency, General Accounting Office, National Youth Administration shops, Government Printing Office, and Civil Service Commission.

Training outside of War Production Plants and Service to Government Departments

There is considerable pressure to make Job Instruction Training available to necessary civilian industries and services such as hospitals. Some of these contribute definitely, although indirectly, to the war effort. And, in other cases, non-war industries would be able to release some of their skilled workers to war production industries if through Job Instruction Training they were able to quickly train new people. Similar requests are anticipated for other T.W.I. programs. Some key individuals have been trained to carry on this work in their own organizations.

JOB METHODS TRAINING

The Job Methods Training program got under way with a master Institute in Washington early in September. The men in the session followed their formal group training by practice in various New Jersey plants which for the past six months have been cooperating in the development of this program. Job Methods Training is a practical plan to help war contractors to train line supervisors to make better use of manpower, machines, and materials. It is an outgrowth of a persistent demand for improving present job procedure resulting from Job Instruction experience. Many industrial engineers in the New Jersey area assisted with the outlining of the program and a number of plants, of varied size and with a wide range of production problems, cooperated by providing groups of supervisors for trial versions.

JOB RELATIONS TRAINING

A third 10-hour program, Job Relations Training, is being launched in October. The program was developed through the assistance of personnel men in all parts of the country and with the cooperation of plants located in various parts of the country which were selected because of rapid expansion problems. Job Relations Training helps new supervisors to acquire skill in gaining cooperation from people on the job. The demand for this program has also arisen from requests for further training from the plants which have used Job Instruction Training.

TRAINING FOR PLANT TRAINING DIRECTORS

The first Training Directors' Conference which Training Within Industry held was provided with materials and conference space by the General Motors Institute at Flint, Michigan, February 17 - 23, 1942. General Motors material on training continues to be available through Training Within Industry to all war production contractors. In preparation for the launching of this service on a national basis, four conferences were held during the summer to coach the training men of the Training Within Industry paid field staff. The major emphasis of this program is the identification of training needs and the planning of in-plant training to meet those needs. All districts are planning to make this program available to training directors of war production industries during the next few months.

The Detroit office has been holding conferences for plant training men for well over a year. Following the T.W.I. Training Director Conference in February, Cleveland inaugurated this type of service. The Philadelphia district has been holding training director conferences throughout the summer and early autumn. New York and Chicago launched their programs in September. The Pittsburgh office, in cooperation with the local personnel association, sponsored a full week's conference in September. St. Louis, Baltimore, and Newark have begun to plan for plant training director conferences.

The increase in the number of plant training directors is in many cases directly attributable to T.W.I. activity. In Michigan, the Michigan Industrial Training Council has been organized on a regional basis. In Indianapolis local training men have organized a Training Coordinators' group.

TRAINING POLICIES FOR GOVERNMENTAL AGENCIES CONCERNED IN SHIPBUILDING

At the request of the Maritime Commission, Training Within Industry has recently made an intensive study of training problems in shipbuilding. Training specialists from several shipyards assisted in the project. Best training practices were reviewed, resulting in the development of a standardized statement of fundamentals for an adequate training program in any shipyard. This statement was adopted by official action of the Maritime Commission September 22, 1942.

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TRAINING MATERIALS FOR SPECIFIC INDUSTRIES

Because of the pressure for training aids in certain critical industries, Training Within Industry has collected and made available reports on best practices in certain fields of shipbuilding and ordnance manufacture. Tool making and machine and tool repair and maintenance experience of several progressive companies are being made available.

RELATIONS WITH ORGANIZED LABOR

The entire Training Within Industry program and plans for future training work have been explained to the Advisory Committee of the War Manpower Commission. A four-man sub-committee (two from management and two from labor) has been appointed to advise Training Within Industry.

Labor cooperation has been enlisted at the headquarters level in advance of the launching of the new Job Methods Training and Job Relations Training programs. This same procedure is being followed in the districts.

Labor cooperation is vital to Training Within Industry. The International Moulders and Foundry Workers Union has issued a description and recommendation of T.W.I. services to its members, and the Steel Workers Organizing Committee has both distributed T.W.I. material and provided its training publications to the T.W.I. staff. The Pennsylvania Federation of Labor has distributed the Program bulletin throughout its membership. T.W.I. representatives have frequently appeared on the program for state and local labor groups.

Union members trained in now-restricted civilian production have been assisted in surveying their skills in order to find use for them in war production. On the west coast thousands of workers have been upgraded under a T.W.I. sponsored program involving labor-management agreements.

At the request of union members from labor gangs in the San Francisco shipyards, T.W.I. has given J.I.T. training to men who move from yard to yard too fast to be included in any training program. J.I.T. was sold to the clothing manufacturers of Baltimore through T.W.I.'s joint approach to the clothing workers and the contractors. Similarly, the Boston office has made a double-headed attack on the shoe industry.

MANAGEMENT INTEREST AND COOPERATION

The increasing number of Training Directors appointed in war production plants is a sign that many managements are recognizing training as a management function and are delegating responsibility and authority to one person in their organizations. A number of these Training Directors have been appointed through Training Within Industry's

recommendation and, in fact, some have been drawn from Training Within Industry personnel and from J.I.T. Trainers.

The Bethlehem Shipbuilding Company has made available to Training Within Industry for reprinting and distribution to any shipyard its excellent shipbuilding manual. The Western Electric Company in similar fashion has provided a very valuable text "Job Instruction." Large quantities of these have been sold through the Government Printing Office at nominal prices.

The Foundrymen's Trade Association, simultaneously with the union, helped to sell Job Instruction Training through its headquarters endorsement. In all industrial sections of the country local groups of the Chamber of Commerce, Manufacturers' Associations, Associated Industries, Rotary Clubs, trade associations, and personnel groups have sponsored meetings at which Training Within Industry presented Job Instruction Training to large numbers of war contractors.

REPORTING - DISTRICT BY DISTRICT

Northern New England (District 1) -- "There is a marked increase, on the part of managements of war production industries, in awareness of the need for planned in-plant training, and we are receiving unsolicited requests for T.W.I. services. Both management and workers who participate in the training sessions seem most enthusiastic over the results of the 10-hour sessions. It has frequently been reported to us that not only has the training of new workers been directly improved, and the necessary time reduced, but also there has been the indirect benefit of better morale within the organization, which is largely attributed to the program. The many small war industries in New England will benefit greatly from the J.I.T. program, but will require much more field work in proportion to the number of Job Instructors certified, than is the case in dealing with larger organizations. In most cases the groups will have to be handled by outside Trainers, frequently in joint sessions." H. H. Kerr, District Representative

Southern New England (District 2) -- "The monthly J.I.T. average since February has been 7 Institutes, 63 new Trainers, 140 J.I.T. in-plant groups. At least 15 more J.I.T. Institutes are required for satisfactory Trainer distribution. Progress is attributable to acceptance by management and cooperating organizations and response to action initiated by T.W.I. J.I.T. has been demonstrated before 28 association meetings, averaging once a week, with a combined attendance of 1,666. The biggest J.I.T. job still lies ahead; the 106 plants now served include the largest. There are 735 war plants with over 100 employees and far more smaller plants. Labor organizations are well informed through personal contact and T.W.I. participation in the annual convention of the Connecticut A.F. of L. Many J.I.T. leads come from federal Apprenticeship representatives, Ordnance, and W.P.B." - A. E. Whitehill, Assistant District Representative

New York (Districts 3 and 4) -- "The first part of the past year was devoted primarily to the establishment of a good sound organization set-up for the purpose of developing helpful training service for the industrial plants involved in war production. The objective was to train a staff of personnel who, through industrial experience and creative ability, could definitely assist industries in solving their problems. Such service has been definitely rendered to a large number of plants with actual beneficial results as confirmed by many letters. The plan of approach was to contact the critical plants and conditions rather than to attempt a thin overall coverage. The introduction of Job Instruction Training served as a definite vehicle for accomplishing immediate tangible results and, at the same time, it opened the eyes of plant executives to the opportunities for additional practical in-plant training programs. There is a definite need for a continuation of the Job Instruction Training program in those plants where it has not yet been introduced. We would assume that we have now covered approximately 10 per cent of the

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field where this program will be effective. Job Instruction Training requires a continued follow-up to make its effects lasting. This is a definite task for the future. The recognition of the need for the expansion of in-plant training will be met through our efforts to work with Training Directors." - Sterling Mudge, District Representative

New Jersey (District 5) -- "Except for a few isolated cases, Job Instruction Training has been extended to every major industrial organization engaged in war work, and hundreds of smaller companies have benefited through the arrangement of combined groups. The U. S. Army Supply Centers have been able to increase production through our training programs. At Picatinny Arsenal nearly 1,000 people have had Job Instruction Training. The supervisory personnel of the Raritan Arsenal has been trained, and at the U. S. Signal Corps in Ft. Monmouth some 18 Trainers are carrying on J.I.T. The fact that so many organizations started with one Job Instruction Training group, to extend it to 10 or 50 or more groups, coupled with insistent demands for a second unit, indicate the attitude of management toward Training Within Industry. Labor, too, has been entirely cooperative, manifested particularly by local labor organizations in respect to Job Methods Training. Our staff has had the indefatigable cooperation of our panel of Training Consultants in making surveys and recommendations to those companies faced with specific training problems. Three Job Methods Training Institutes have already given the initial impetus to this unit. Not only has a tremendous training task been accomplished, but hundreds of companies who were never before conscious of the efficacy of training on the job are being permanently motivated to new training trends." - Glenn Gardiner, District Representative

Eastern Pennsylvania and Delaware (District 6) -- "We have noted a definite upturn in results, not only in management's approach to Job Instruction Training but also to training problems in general. We find that Job Instruction Training is an excellent introduction for the whole subject of supervisory training to managements which heretofore have never given it serious consideration. Many managements are recognizing the need for replacing men with women and are starting to move in this direction with evidently satisfactory results. We have had some success in convincing managements of the need for assigning definite responsibility for coordinating all of their training activities to some one individual in their organizations. We believe that the continued and sustained interest in our series of Conferences for Training Directors is indicative of management's real interest in training problems plus its determination to work out solutions for at least the most pressing of such problems. We have succeeded in developing what I feel is a thoroughly satisfactory relationship with both labor and management members of the Advisory Council." - H. W. Jones, District Representative

Maryland (District 7) -- "The program of Training Within Industry has been particularly vital to the war effort in the Baltimore area because of the community's importance in the manufacturing fields of (a) aircraft, (b) shipbuilding, (c) steel, and (d) radio and related lines. In addition to our services to these war contractors our facilities have

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been utilized by many smaller essential industries as well as branches of the armed services. Splendid testimonials as to the effectiveness of our work have been received from many of these organizations. Both management and labor have been quick to see the value of T.W.I. and the few who were slow to recognize its worth are now enrolling. In many cases J.I.T. was the first manifestation of organized training in any of the war plants. Using it as a door-opener, many companies were encouraged to start training programs which branched out to meet other vital training needs. For example, after a large aircraft plant introduced J.I.T. to its engineering department, enough interest was created to start a large-scale design simplification training program. We have had the cooperation of union officers in many circumstances where company managements have requested us to explain J.I.T. to the labor representatives of their employees. Our job today is more important than ever before. All of our promoting, servicing, and quality control efforts in this enlarged scope of activities is geared to the central theme that through shortened training time in these critical industrial times we will be helping to shorten the war." James M. Kahlert, District Representative

Atlantic Central (District 8) -- "The four principal industries in District No. 8 are textile, hosiery, shipbuilding, and furniture manufacture, and also a number of small metal industries. Due to the present emergency, all of the above mentioned industries have been hard hit with the exception of the shipbuilding industry. All of the other industries have had to change or convert their plants from the manufacture of civilian needs to war production needs. This conversion began around January 1 of this year and is still in process. It is estimated that around 60 per cent of the total number of industries in our district are now working on war production, varying from 10 per cent to 100 per cent on war work. During the organization of the Training Within Industry work in February of 1941, it was found that there were only five full-time personnel directors in this district. There are now probably around five hundred who are either working full time as personnel or as personnel and training directors. Since the conversion from civilian to war work, the interest in training has grown by leaps and bounds, with particular emphasis being placed on the Job Instruction Training program. There is beginning to be a demand also for Job Relations Training and Job Methods Training to to follow the Job Instruction Training. The prospects for this fall look very good in our district." - George G. Arthur, District Representative

Southeastern States (District 9) -- "Area Nine at the inception of T.W.I. did not have any critical need of Training Within Industry, since this section has had for the last ten or fifteen years a considerable labor reservoir, but as war industries were fast becoming located in this section training needs became more and more important. Aircraft, shipbuilding, and some ordnance plants were the particular classes of industries that first evidenced the need of much training. Steel, aluminum, power and light, and textile industries, of which there are considerable in this area, had no urgent need at first for more skilled labor. However, at present war industries of all kinds are clamoring for Job Instruction Training. The District Office has been intensely busy in getting

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these trainers and urging J.I.T. as much as possible. Labor believes in Job Instruction Training and wants more of it in this area. Perhaps no section of our country is more conservative than the Southeast in adopting innovations and new policies for training. Never before in the South has industry asked that streamlined training be initiated immediately; consequently the T.W.I. set-up has a wonderful opportunity now to inaugurate more training and the whole T.W.I. pattern which the District Office has done its best to sell to Southeastern industries. My prognostication of this section will become even more highly industrialized than it is and will have some of the best training programs in the whole country, since the spirit of cooperation and willingness to help in every way toward the war effort is unanimously manifest here." J. E. McDaniel, District Representative

Ohio Valley (District 10) -- "Perhaps the best way I can sum up the progress made on in-plant training in District 10 is to express the conviction that when J.M.T. and J.R.T. are ready, we'll market both far more rapidly than we have J.I.T. Management's attitude ranges all the way from antagonistic alibis to enthusiastic endorsement. Acceptance by operating people runs the same gamut. Labor has been quite helpful in many cases. There are four reasons why I feel the trend in District 10 will be definitely up. To begin with, while we have a lot to learn about the marketing of training, we certainly know far more about it now than we did in the beginning. We have some outstanding employers thoroughly sold on J.I.T. who will do an excellent pioneering job for us on J.M.T. We have some hard nuts yet to crack, some are beginning to show slight fractures because of the cumulative results and growing endorsements among other employers. The labor market is getting worse, with the result that some of our most rugged individualists are beginning to feel somewhat less self-sufficient. With this growing realization of need, and the growing conviction that T.W.I. has some helpful answers, the prospects for the future look pretty good." - Paul Mooney, District Representative

Western Pennsylvania (District 11) -- "In Western Pennsylvania and Northern West Virginia are located many companies which produce materials and heavy products essential to war needs. These consist of such items as coal and oil, iron and steel - castings, forgings, structural forms, armor plate, aluminum, glass, pottery, cork, and lumber. Among the important manufactured products are automotive and Diesel Engines, ship-propulsion machinery, boats, tanks, guns, shells, bombs, explosives, and various other ordnance components. The district is known as the "Workshop of the Nation." Many of the older companies which have expanded to handle war contracts have long had well-organized training programs. Younger companies have found it necessary to develop such programs in order to effectively build their organizations. The T.W.I. program is being received enthusiastically both by management and by organized labor groups. Requests are being received daily for assistance in identifying training needs and promoting Job Instruction Training. Also, we are receiving many requests for assistance on methods and relations instruction. The Training Within Industry service is expanding both in scope

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and extent to meet the growing demand for service. The quality of this assistance is steadily improving. Significant results in speeding the war effort have been achieved during the past two years, and substantial ground work has been laid for solving some of the after-war problems of readjustment." - Carl S. Coler, District Representative

Northern Ohio (District 12) — "We have been most successful in getting the cooperation of various industrial organizations to help us put across the T.W.I. program to groups of employees. These associations include manufacturers associations, foremen's clubs, and others. In such groups we usually talk to industrial representatives who can make policy decisions. At many of these meetings the streamlined version of J.I.T. was presented. Since April 11 we have held seven meetings of training coordinators and training directors of industries in our district, at which 59 companies were represented by 115 full-time or part-time directors. These meetings were held for the discussion of specific training problems. Those companies having standard training programs have passed on considerable information and ideas to those who were just forming training programs. We feel that the placing of training directors and otherwise influencing the manufacturers to appoint someone in charge of training is one of the most important functions of our work. We have actually chosen, trained, and placed nine directors in various industrial plants. Through our recommendations and training offered we have been instrumental in placing three additional training directors. We are gratified to report that ten of our trainers have been promoted into industry or to government in responsible positions, in most cases not on training assignments, but where they will have favorable influence on in-plant training." - Oscar Grothe, District Representative

Michigan (District 13) -- "We believe we are seeing noticeable improvement in the coverage of our district. Our out-in-the state program is becoming well developed. We have placed much stress on quality instruction, and believe that our program has been reasonably strong. Many manufacturers, who a few months ago thought they needed no help on training, are beginning to appreciate assistance. The introduction of women into war work, the scarcity of workers regardless of skill, and the startling realization that men and women must be trained will speed the program. However, we still have many industrialists who simply do not realize that training is a 'must' phase of their operation. Many companies still feel that a miracle will happen, and properly qualified workers will be delivered to them on a platter. We have found labor interested in furthering our services to industry, with particular boosting of J.I.T. Some people have often been sympathetic to training, whereas their practical managements were cold to its possibilities. Our best estimate is that two-thirds of the J.I.T. job lies ahead. Nothing will be left undone to push our program as it has never been pushed before." M. M. Olander, District Representative

Indiana (District 14) -- "Training Within Industry coverage in Indiana is comparatively complete. War production plants of all types and sizes have made Job Instruction Training principles a 'must' in their

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training program. Probably the most outstanding attribute of Job Instruction Training is the simplification of converting civilian production workers into war production workers. Accurate instruction as well as accurate production is required to properly manufacture precision war machinery. It has been necessary for huge factories throughout the country to make radical changes in their production routine to furnish this country with the vital material used in total warfare. Probably one of the most noted examples of such conversion is here in Indiana. Quarrying and fabrication of Indiana limestone is, during peace time, a major industry in Indiana. However, the war has forced these companies to reduce their output of this stone to an absolute minimum and switch to the production of the necessities of war. Stone companies in Indiana have been accustomed to handling and forming into usable material for constructional purposes huge blocks of stone. Training Within Industry, its instructional programs, and its aids have made it possible for these same companies to produce minutely small tools of war." - A. E. Sinclair, District Representative

Illinois (District 15) -- "A year ago we were obliged to call war production companies, seeking to make our services available to them; there is now a refreshing change. Now they call us, seeking all kinds of assistance and information. With few exceptions, management has been very cooperative. J.I.T. has received an enthusiastic reception; and there is pronounced eagerness for J.R.T. and J.M.T. This holds true both of management, and people in plants. In the infancy of J.I.T. we used particular care in selecting our W.P. Trainers. It is becoming increasingly important that an even finer screen be set up to insure closer selection of individuals for the jobs. We feel that our pressing duty in the future now is to follow management up to see that proper use is made of such tools as J.I.T., etc., so that management is made aware of its proper responsibility to see that interest is maintained and the good tools properly utilized. We have had cases where labor representatives want to take a more active part in our program, and feel that this is going to be more forceful in the future. Ahead lies very wide expansion of the services we can render industry - a prospect to which we are looking forward with eagerness and confidence." - Paul Wertz, District Representative

North Central (District 16) -- "In two years T.W.I. has been of material assistance in converting six agricultural states into an industrial reservoir for defense. When the Lend Lease Bill was signed, the 16th District was essentially an agricultural area with a limited number of manufacturing plants, principally food processors. Today many large heavy industries, ordnance and shell loading plants are in operation, staffed and manned by employees who two years ago were mainly farmers. The benefits of T.W.I. have been attested to by management, operating executives, and labor. After initial institutes and training programs, such plants as General Mills, Inc., of Minneapolis, the Glenn L. Martin-Nebraska Company, of Omaha, Nebraska, and the Des Moines Ordnance Plant have requested and insisted upon return engagements to go deeper into

their training problems. Successful results of T.W.I. are so apparent that civic groups are promoting our activities with the smaller manufacturer, whom we have difficulty searching out and helping. This district has also received requests from labor suggesting that we approach management of specific plants to institute T.W.I. training methods in their plants. Unions give us their unqualified approval and wholehearted support. Military representatives of the Army and Navy have on numerous occasions commented on the value of T.W.I. and have been outspoken in their suggestions to defense contractors that they institute T.W.I. programs in their plants." - E. I. Clrich, District Representative

South Central (District 17) -- "The progress of in-plant training in this district has not, in our opinion, been satisfactory. The management attitude of most old-established plants (which are merely converted without any attendant large increase) has not been favorable to in-plant training and this attitude is, of course, reflected in the opinion of the operating men in these plants. We have yet to have a single instance in this district where labor has at any time raised any objections to any training which has been instituted in a plant - either as a result of our suggestions or of the initiative of plant management itself. The requests for additional assistance have, in the main, come from training directors of large plants. We have found that the greatest objection to in-plant training has come from men in such positions as personnel directors and in some instances, training directors, through the feeling that their previous methods would continue to handle their situations." -
A. Earl Wyatt, District Representative

Gulf States (District 18) -- "In our report of a year ago operations were just starting in the Gulf Coast District and while many are not yet complete, due to shortage or non-delivery of material and equipment, there is much war contract manufacturing being done. For instance, war plants who are using Job Instruction Training as of this date have approximately 115,000 employees, whereas our report of a year ago showed 1,250. This larger figure will be considerably more before another year has rolled around or by the time the plants under construction are completed in this district. The war materials produced are for the most part cargo ships, Navy ships, tugs, mine-layers, landing boats, sub-chasers and airplanes, airplane parts, bomber struts, shell loading, ammunition, cannons, tents, cots, blankets, magnesium metal, tank gear transmissions. Four of the largest synthetic rubber plants in the country are located in this district. There are also ammonia plants, gasoline plants, and produces of practically everything used as implements of war in this District 18 alone. It is through J.I.T. Institutes that Management has become more 'training minded' and we find more specific requests for Job Instruction Training each week as we spread the Institutes to additional industries. We have requests currently from ordinance plants that are scattered in all directions from our headquarters, and we have a request from the Commanding Engineer of the Engineering Department at Camp Claiborne, Louisiana, which is in addition to the war contractors who are requesting training at this time. Besides the firms reported in our weekly reports, we have J.I.T. Trainers situated in eleven Sub-Depots

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in Texas alone, which are sub-stations out of the large Duncan Field Repair Depot at San Antonio." - Tracy Word, Assistant District Representative

Rocky Mountain (District 19) — "Our district is made up mainly of small plants; the largest plant in the district employs 16,080 workers, but many plants employ less than 50. The 10 largest plants in our district employ 49,104 workers, which leaves a balance of about 20,000 workers distributed through 154 plants. The employment in this district is diversified, consisting mainly of small manufacturing concerns, coal and metal mining, retailing, and agriculture. There has been a rapid increase in the number of persons employed in the manufacturing industries, due to the war program. The most important war industries include steel, munitions, fabricating of ship hulls, rubber, trunks, trucks, and sugar. We have already rendered service to the greater percentage of these manufacturing concerns. In addition, we have entered very definitely with J.I.T. into the coal mining properties of both Utah and Colorado. In Utah, considerable work has been done with smelting companies, and in Colorado, the way is paved through the Metal Mining Association for adapting the program to the non-ferrous metal mines of the state." We have had splendid cooperation from labor advisers and labor organizations." - George M. Kirk, District Representative

Southern California (District 20) — "The adoption of in-plant training in the Pacific Southwest has progressed steadily during past months, but the step-up in recent weeks is noteworthy. In-plant training now is recognized by management as the solution to the need for production workers and its principles are acceptable to labor groups. Management's changed attitude is mainly due to our acute labor supply condition and to the proven effectiveness of the Training Within Industry program. Remaining employables are persons totally inexperienced in the fields where employment opportunities exist and many lack industrial background. Benefits derived from Training Within Industry programs are becoming widely known. The success of Job Instruction Training has resulted in numerous inquiries from plants which have only heard of its effectiveness; there are many additional inquiries from plants which have been served with Job Instruction Training for assistance in other phases of supervisory development such as our Job Relations Training and Job Methods Training and the consideration of supervisory conferences. There is every indication that practically all resistance to training which existed formerly in many quarters has been replaced by a desire for our services. Properly planned upgrading, improved supervision, and correct job instruction have produced a desirable effect on morale and caused operating workers to look with favor on our program. The outlook for the coming months is for greater activity in supervisory development and for a more general application of in-plant training." - Charles H. Fishburn, Assistant District Representative

Pacific Central (District 21) — "We have served 44 per cent of the firms and 76 per cent of the employees in the district. The fact that we have assisted practically all of the large war industries does not mean

that our job is complete. In fact, many of these have only recently felt the shortage of skilled help sufficiently to call on us for assistance. There is much to be done in the development of in-plant training programs for skilled labor, but the immediate and probably most important job is in the field of supervisory training and the establishment of the position of training coordinator in many of the companies. During the past year our Trainee Program was put into operation. On August 1, ten months after its inception, there were 24,728 men in eleven shipyards carrying special Trainee Cards as provided by this written agreement with the unions supplying men to these yards. Over 7,500 men had completed the six months' upgrading period and had arrived at the status of journeyman specialist. During that time this office was instrumental in calling together management representatives and labor unions to draw up standards for apprenticeship indentures in the shipyards. Our part in this was calling the meeting together and turning it over to Mr. Archie Mooney, Secretary of the California Apprenticeship Council. Standards have been adopted, and have been signed for several certain crafts in the shipbuilding industry. These were the first standard apprentice programs in any shipyards in this area. No review of this experience can properly omit comment on the far-reaching effect of the cooperation of the labor unions. Through the labor advisers from both the A.F. of L. and the C.I.O. the training program has been greatly accelerated." - Alexander R. Heron, District Representative

Pacific Northwest (District 22) -- "The development of meeting the obligations of Training Within Industry as a contribution to the war production effort, during the past year, we believe has resulted in a real contribution in the way of rendering material assistance in the problem of rapid organization expansion which is a prerequisite in industry to meeting contractual obligations to the government. The efforts which have been most successful have been the Job Instruction Training program; the training of skilled and semi-skilled classifications through agreements between labor and management in the shipbuilding, aircraft, and allied-metal trades industries; and the promotion of the plan to develop continuous improvement in the overall training program through the employment of plant training directors. The attitude toward Training Within Industry service on the part of both management and labor, and the public in general, we believe has been exceptionally good. We are continuously receiving specific requests for such additional service as Job Relations Training and Job Methods Training. It is gratifying to note that T.W.I. service is being accepted in all types of industry involved in the war effort as is evidenced by the number of plants involved. As an example we now are definitely engaged in training labor in practically all government installations which are directly involved in the war effort. In forecasting the service which is required and which we are prepared to furnish in the future, we see an ever-increasing demand for the particular type of training which we have to offer and a ready acceptance by all agencies which have contractual obligations to meet in connection with war production." - H. G. Winsor, District Representative

PLANTS SERVED AND NUMBER OF EMPLOYEES

District	Plants Served	Number of Employees	District	Plants Served	Number of Employees
1	252	300,000	13	572	534,953
2	106	229,016	14	159	174,382
3 & 4	319	336,434	15	477	372,261
5	857	427,246	16	79	86,443
6	260	297,531	17	102	182,592
7	41	152,002	18	70	122,736
8	110	112,749	19	164	70,927
9	115	172,650	20	189	327,849
10	227	186,915	21	109	160,590
11	551	547,340	22	490	309,056
12	504	501,318	TOTALS	5,753	5,604,990

PLANTS DELEGATING TRAINING RESPONSIBILITY TO A TRAINING DIRECTOR

District	Plants Served	Number of Employees	District	Plants Served	Number of Employees
1	26	100,000	13	48	270,103
2	9	59,000	14	14	46,332
3 & 4	50	219,489	15	33	139,130
5	23	75,411	16	11	42,794
6	17	111,107	17	18	137,581
7	17	133,590	18	17	88,235
8	9	107,996	19	5	31,430
9	8	52,000	20	36	268,342
10	26	65,417	21	8	97,150
11	11	30,705	22	14	126,819
12	37	224,631	TOTALS	367	2,127,262

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JOB INSTRUCTOR TRAINING SCORE SHEET

September, 1942

T.W.I. District	No. Institute Conductors available for assignment	No. W.P. Trainers available for assignment	No. Plants Served and Being Served	No. Employees in Plants Served	No. W.P. Job Instructors
1. Upper New England	5	214	252	215,050	9,012
2. Lower New England	9	274	118	234,265	9,041
3 & 4. New York	6	354	319	336,434	10,328
5. New Jersey	2	159	801	348,165	19,852
6. E. Pa. & Delaware	3	157	317	325,428	12,693
7. Maryland	5	125	45	160,052	7,694
8. Va., N. & S. Car.	4	280	78	69,568	1,583
9. So. Eastern States	3	186	110	133,000	4,428
10. Ohio Valley	8	307	191	158,544	7,102
11. W. Pa. & N. W. Va.	2	457	578	558,458	15,386
12. Northern Ohio	5	197	535	513,136	18,157
13. Michigan	4	160	235	325,000	15,514
14. Indiana	7	300	155	174,282	11,379
15. Ill., S. & E. Wis.	7	291	435	362,194	15,607
16. N. Central States	2	124	104	94,298	4,840
17. S. Central States	1	87	112	185,382	7,989
18. Texas & Louisiana	5	40	78	138,852	8,088
19. Colo., Wyom., Utah	5	97	80	64,069	3,138
20. S. Calif., Arizona, New Mexico	2	95	92	252,922	11,299
21. N. Calif., Nevada	2	69	107	154,250	9,532
22. Pacific Northwest	2	142	243	284,330	9,977
TOTALS	89	4,115	4,985	5,087,679	212,639

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JOB INSTRUCTION TRAINING IN MAJOR INDUSTRIES

Industry	Number Plants Using J.I.T.
Airplane & Parts	135
Aluminum & Aluminum Products	24
Automobiles & Accessories	102
Ceramics & Clay Products	32
Chemicals, Dyes & Synthetic Products	74
Clothing	112
Electric Apparatus & Equipment	221
Explosives & Powder & Artillery	56
Food Products & Canning	74
Glass & Plastics & Cork	85
Iron & Foundries	139
Leather Products	32
Lumber & Millwork	56
Machinery & Tools	548
Metals, Alloys & Specialties	314
Oil, Oil Products & Gases	37
Paper, Paper Products & Printing	103
Pharmaceuticals & Surgical Supplies	60
Precision Instruments & Meters	86
Public Utilities	78
Radios & Equipment	92
Roofing, Building Supplies & Paint	71
Rubber & Rubber Products	87
Shipbuilding	86
Steel & Steel Products	274
Textiles	99
Uniforms, Canvas & Supplies	36
Optical Goods & Lenses	25
Miscellaneous	134
Ordnance	105
T O T A L	3,357

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COMMENTS ON JOB INSTRUCTION TRAINING

THE ASSISTANT SECRETARY OF THE NAVY

Washington

21 September 1942

Dear Mr. Dooley:

Recent reports indicate that the Job Instructor Training Program prepared and made available to all war contractors by the Training Within Industry Division of the War Manpower Commission is an effective training procedure for the development of supervisors and lead men. It is well adapted to the need for job training where specific skills must quickly be developed and the "know how" of a job effectively conveyed by the experienced employee to the inexperienced employee.

To assure maximum output from our war production industries, it is essential that those who have not already done so, employ sound plans for training the tens of thousands of unskilled workers who must be employed. Navy contractors who do not have organized training programs in their plants who are now faced with the necessity of training large numbers of new employees should be greatly interested in the practical help which is available to them through the utilization of the Job Instructor Training program. It is not a schoolroom method but one which every foreman and lead man can use daily in his job of breaking in new men and women and upgrading present employees to more responsible jobs. This program will, if properly applied, shorten the time for getting new workers into production, reduce spoilage, safeguard against damage to equipment, reduce tool breakage, and tend to reduce accidents.

In writing this letter, may I express the hope that, in view of the urgent need for increased production, management will take full advantage of the valuable service provided by your organization. It is my understanding that the Job Instructor Training service is made available by experienced men without direct cost to war industries.

In case you wish to use this letter in connection with the promotion of your program, you may feel free to have it duplicated.

Very truly yours,

/s/ Ralph A. Bard

C. R. Dooley
Director
Training Within Industry
War Manpower Commission
Washington, D. C.

FROM A RAILROAD

"With almost twenty years service with the railroad, not always as a Supervisor, I had believed that, starting from the bottom up, learning as advancing, I had gained a very comprehensive knowledge of and about handling men. I wish to state that it was certainly a revelation to me the brief and efficient manner in which Mr. Campbell presented the J.I.T. outline to us. Many situations that we buried in daily contact brought themselves up in a new and important light, as well as a great many new factors that we had never considered before. This service was of such great interest to me that I believe I could take course after course and still gain new knowledge each time.

"So I thought I would drop this brief note to you, gentlemen, in behalf of the other men as well as myself, complimenting you on the good we feel you have done. We are satisfied we will accomplish a great deal as a result of this training. For us, you can record it as "Another Job Well Done." - Roundhouse Foreman

FROM A METALLURGICAL PLANT

"After over thirty years in non-ferrous metallurgy, and having had to learn many different occupations in my climb from student chemist to Asst. Superintendent in charge of operations in one of the world's largest copper smelters and refineries, I can say with authority that my path would have been a lot smoother for myself, and for the hundreds of foremen and workmen whom I had to instruct, if my former superiors and I had had some scheme of systematic instruction such as the J.I.T. Training Course which I recently was privileged to go through.

"Simple? Yes, but systematic and complete, and especially valuable in this industry where so few know the details of the many necessary operations and where thousands will eventually have to be taught operations which are quite strange to them.

"Thanks to your clear exemplification of the course, your extraordinary ability to note the missing details in our Job Breakdowns, and, above all, your remarkable patience, the complete set of Job Breakdowns prepared under your supervision, together with 'How to Instruct' and 'How to Get Ready to Instruct,' will simplify the big job we have ahead of us. It will also, and this is important, enable foremen and superintendents in a short time to delegate operating details to their assistants and workmen, to the end that they may give more attention to their real jobs, those of supervision.

"While I do not have direct authority over workmen or subforemen in as far as teaching them operating details is concerned, I am pleased to note a uniformity in all shifts doing the same operations and am convinced that methods in job breakdowns are being closely followed in the Operating Departments, and I will do my utmost to see that there is no slackening in future months." - Night Superintendent

FROM A CONVERTED TYPEWRITER PLANT

"It has been interesting the way our follow-up of J.I.T. has evolved. In the usual confusion and rush of a conversion to war work, it was almost impossible to focus much attention on Job Instruction.

"We had used milling machines on typewriter production, so, of course, had operators with 10 and 15 years' experience. However, we had a great many new type millers with automatic fast carriage feed to the cutters. Within a week, two operators failed to get the stops set and the work crashed into the cutters at high speed. Of course, the cutters were ruined. Translating the dollar damage into training costs, over 1,000 men could have been properly trained with J.I.T. at the cost of the damage to the tools. But even the dollar loss was secondary to the time needed to replace the cutters.

"Our plant engineer immediately made a strong point of the lack of instruction and our plant manager supported him beautifully. Consequently every job now gets a job breakdown and definite men, who have J.I.T. training, are responsible for instruction on each shift. Every operator gets definite Job Instruction, regardless of past experience. The savings in dollar losses, and more important in machine time loss, will be enormous.

"I thought you would be interested in this as, in practice, the most difficult problem is how to get such an excellent tool into actual use. Probably any plant can find a similar example to focus everyone's attention to the need for really using J.I.T." - Training Supervisor

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A master breakdown for each job in the Finishing Department of a California plant of the Aluminum Company of America has grown out of J.I.T. Each supervisor prepares a breakdown of a given job and the master breakdown is worked out in a supervisory meeting.

A rigger foreman in the Pacific Northwest reports that he knows now that he often antagonized men by telling them what they already knew - now he takes the time to find out, and complete use of the four-step method of instruction has cut training time in half. He feels that he has also benefited in his own work, saving one-third of the time on jobs he performs.

A union business agent reported to T.W.I. that his men had heard of J.I.T. and wanted it, but that so far the west-coast shipyard where they are employed had not scheduled them. Accordingly, they are being J.I.T. trained in their hiring hall.

A West Virginia Construction Company reports job breakdowns and J.I.T. have made tearing down and re-assembling a bulldozer a job which can now be handled by unskilled labor.

Giving J.I.T. to only one end of an assembly line in an Ohio plant resulted in such a pile-up that time had to be called to train the others.

Johnson & Johnson is building a new gas-mask plant in New Jersey. Since only one out of twenty employees will have had previous experience, and those men will be at the new plant only temporarily, all supervisors are getting J.I.T. before the plant goes into operation.

The J. J. Little & Ives Company, New York, reports that a great deal of overtime had been worked because breaking-in unskilled help seemed too difficult. J.I.T. has meant the stopping of overtime.

J.I.T. will help the state of New Jersey to train fifteen to thirty thousand workers who have failed to pass physical exams for military service and who are now being placed in war production industries.

Twenty-eight out of the first thirty men trained by J.I.T. at Douglas Aircraft became supervisors within six months.

The T.W.I. program, including J.I.T., is credited by Associated Shipbuilders, a Pacific Northwest yard, with its 60 per cent decrease in time taken to build a seaplane tender.

As a result of good experience with J.I.T. in California, the program was presented and sold to Management of U. S. Rubber at its Detroit headquarters. Now it is prescribed for all their plants.

Essex Wire Corporation, Detroit followed up J.I.T. with intensive work on job breakdowns and scrap control - one month's scrap decrease, 34 per cent.

A supervisor in charge of the diamond bore machines at Detroit Aluminum & Brass credits J.I.T. breakdowns with a 25 per cent increase in production.

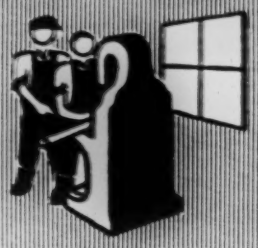
Mines Equipment, St. Louis, is following up J.I.T. by breaking down every job. And, as a result of J.I.T., some molders are as well trained in a week as men who have been on the job for months.

In two days an Ohnite Manufacturing Company employee reached the previous three months' output record.

Training for grinding a quarts crystal was reduced from three weeks to three days.

Iowa Ordnance plant credits J.I.T. with an 11 per cent improvement.

Acme Steel reports that competent head operators are now produced in thirty days instead of six months, and truck drivers in four days instead of six weeks.



MORE PRODUCTION THROUGH TRAINING

The

TRAINING WITHIN INDUSTRY PROGRAM

August 1942

Bulletin No. 1

TRAINING WITHIN INDUSTRY

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WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY PUBLICATIONS

Bulletins

1. **The Training Within Industry Program.**—Service to war production contractors, policy of TWI, headquarters and field personnel.

2. **Upgrading.**—Moving employees within an organization to develop and use each to the maximum of his abilities.

2A. **Training the Production Worker.**—Successful industrial practice in getting new workers into production with minimum training time.

2B. **How to Prepare Instructors to Give Intensive Job Instruction.**—Giving organized knowledge of production operations and methods of instruction.

2C. **Helping the Experienced Worker to Break In a Man on a New Job.**—How to improve the training done by the man on the job.

3. **Expediting the Training of Skilled Tradesmen Through Apprenticeship.**—The development of all-round craftsmen in the emergency.

4. **Strengthening the Managerial Organization.**—Planned development for the building of a strong supervisory organization.

4A. **Expanding the Managerial Organization.**—Upgrading and training of supervisors.

4B. **Improving Supervisory Practice.**—Specific steps to take in increasing the ability of supervisors to meet their responsibilities.

5. **Training Aids.**—Training time can be shortened through the use of reliable supplementary methods and materials.

6. **Tying in Preemployment Training with On-the-Job Training.**—Sound relationships between public instruction and factory training shorten training.

6A. **Supplementary Instruction for Upgrading.**—Planning and integrating of off-the-job instruction.

7. **Increasing War Production Through Employment of Women.**—Good planning and preparation needed for the changing employment picture.

8. **Introducing the New Employee to the Job.**—Getting the new man off to the right start.

8A. **Safety on the Job for the New Employee.**—An integral part of induction and instruction.

Examples of Successful Training in War Production Industry

Precision Lens Grinding.—Volume production obtained through specializing work.

How Idle Machinery Is Being Used for Training.—Preemployment training at night.

Meeting the Need for Skilled Workers in a New Airplane Engine Plant.—Planned training for a mass-production establishment.

Training for Quick Production in Heavy Manufacture.—Producing while learning is feasible, even with workers entirely new to industry.

Organizing Manpower for a Small-Arms Ammunition Plant.—Restricted.

Upgrading in a Large Steel Corporation.—Staff training activities.

Training for the Electrical Department of a Shipyard.—Expanding the electric shop force.

All of the above publications are available through the nearest Training Within Industry District Office—see list on pages 8–11.

Available Through the Government Printing Office

(Send orders to Superintendent of Documents)

Job Instruction (Western Electric Company), 10 cents.

An Introduction to Shipbuilding (Bethlehem Steel Company), 20 cents.

The PROGRAM

THE Training Within Industry Program was established in August 1940 by the National Defense Advisory Commission and was continued under the Office of Production Management and then the War Production Board. By Presidential order on April 18, 1942, Training Within Industry was transferred to the Federal Security Agency to function as a part of the new War Manpower Commission which now handles all problems of labor supply and training.

Underlying PURPOSE of "TWI" activity is:

> ***To assist war production industries to meet their manpower needs by training within industry each worker to make the fullest use of his best skill up to the maximum of his individual ability, thereby enabling production to keep pace with war demands.***

Training Within Industry deals exclusively with industry's own training responsibilities. It recommends that all war production plants, consistent with the terms of their existing labor agreements, give balanced and appropriate attention to the following phases of in-plant training:

1. *UPGRADING* of all classes of personnel as their experience and abilities warrant, through planned job progression, job rotation, and intensive supplementary instruction both on and off the job. Each plant should take stock of the talent and experience of its own personnel before employing new men and women.

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2. Development of *PRODUCTION SPECIALISTS* through intensive instruction on the job in basic operations.

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3. Development of all-round *SKILLED MECHANICS* through trade apprenticeship, in accordance with Federal standards, separate from production worker training, for the purpose of developing a predetermined, limited number of all-round journeyman mechanics.

•

4. Development of *SUPERVISORS* through careful selection, assignment of supervisory duties of increasing responsibility, and provision for related organized help through discussions and conferences, under both plant and outside auspices, dealing with methods of instruction, methods of developing better ways of doing a job, methods of improving working relationships, and knowledge of responsibilities.

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HOW "TWI" ASSISTS WAR PRODUCTION INDUSTRY

It maintains a field force with offices in 22 districts throughout the United States, as listed in this bulletin. It is staffed by training and personnel specialists, many of whom are loaned by their companies for part-time or full-time work.

•

Training Within Industry renders specific ADVISORY ASSISTANCE to war production industries in inaugurating and improving programs which they carry on within their own plants, at their own expense. There is no authority to enter a plant on any basis other than with management's cooperation. Four general types of advisory assistance, listed below, apply in most cases and are adapted to fit conditions in each specific plant:

1. Identification of training needs and recommendation of training programs to fill such needs.
2. Aid in setting up a program within a plant to meet its needs.
3. Clearing house on experience of other employers who have met their training problems. This is cleared through "TWI" headquarters and its field organization.
4. Recommending the most effective use of tax-supported employment and training agencies of the Government. Only through interpreting job requirements and the needs of industry to these agencies and interpreting their facilities to industry can maximum results be obtained from preemployment and supplementary instruction.

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In addition to the above advisory assistance, the Training Within Industry Division conducts specific intensive training programs for the development of potential, newly appointed, and experienced supervisors and training directors. The programs for supervisors require 10 hours, and for training directors 48 hours.

Job Instruction Training gives the supervisor practice in how to "break in" men on new jobs.

Job Methods Training shows the supervisor how to simplify and improve methods of doing a job.

Job Relations Training gives the supervisor pointers and practice in how to work with people in a way that gains cooperation and promotes teamwork.

Training of Training Directors gives intensified coaching in how to operate and improve complete, plant-wide training programs.

The
POLICY
approved by both Management and Labor

"LEARN BY DOING — PRODUCE WHILE LEARNING"

IN this emergency, as well as in normal times, it is good American practice and efficient business for each worker to make the fullest use of his best skill up to the maximum of his individual ability. Only through such use of the intelligence and skill of the Nation's manpower can production keep pace with war needs.

1. Additional workers should not be trained unless locally available workers of equal skill have been absorbed.

2. There are normal losses from among skilled workers due to advancement into supervisory positions, changes to other occupations, sickness, death, and retirement. These losses go on continuously, and it is necessary to bring along well-trained workers to replace them. In addition, there is need to make up for the lack of apprentice training during the past 10 years. These are the reasons why organized apprenticeship programs are so important now.

There are two important phases of apprentice training:

(*a*) A definitely planned program of experience, scheduled and assigned step by step to enable the apprentice over a predetermined time to acquire skill in various kinds of skilled work in a trade.

(*b*) For every skilled job there is related technical matter, much of which can best be taught off the job. To be effective, this related instruction must be very closely tied into the current job experience. Practice, related theory, and technical knowledge must go hand in hand. Workers, employers, and technical educators should collaborate in determining what shall be included in this instruction and how it can best be related to the work experience.

The proportion of apprentices to be trained can best be determined in local areas in numbers and programs agreed upon in joint conferences between management and interested groups of employees or by agreements arrived at by collective bargaining units.

3. In a less formal way, many workers acquire a breadth of experience by learning one job at a time and becoming skilled in that, and advancing to a higher grade of work when opportunity permits. In an upgrading program the time cannot be definite; it is controlled by available opportunities, depending upon production programs and specific vacancies as they occur. This differs from an apprenticeship program where the opportunity is controlled by advance agreement. Therefore, while craftsman experience may be gained by an apprentice in from 3 to 4 years, it may take the production specialist two or three times as long, or longer, to acquire corresponding skill and versatility through an upgrading program, and, of course, many will remain in a specialized occupation.

In times of rapid expansion when there is a shortage of skilled workers, there is no choice but that of using inexperienced workers from other kinds of work or young people without any work experience but with good orientation background gained in public vocational schools during preemployment training. Through intensive instruction on the job they must then be brought to their highest skill on a limited

operation in the shortest possible time. Advancement into more skilled work should always be made from among employees of longer experience on jobs which are good foundations for the higher skills. Attempts should not be made to displace all-round skilled workers by narrowly skilled specialists.

4. Where there is a collective bargaining agreement the employees' elected representatives should work with management in the establishment of plant training programs.

5. Management has a twofold responsibility: Foremen, instructors, and experienced workers must assist less experienced workers in acquiring new skills; and as far as possible they should see that employees who have the desire and capacity for advancement be not kept indefinitely on jobs requiring skill in single operations. The supervisor therefore has the responsibility of developing his men and should acquire special skill in instruction just as he must acquire the skill of maintaining good relations with his men and the skill of improving technical production.

Apprenticeship, upgrading, and supervisory training programs within industry are greatly implemented by making available opportunities for individuals to get instruction and related knowledge which enable them to fit themselves for advancement. Whether these facilities are made available by public educational institutions, employers or organized labor groups, it is essential that there be continuous consultation between workers, management, and educators. Only through such cooperation can the instruction be of immediate practical value.

Such philosophy, such practices, and such consultation should result in well-balanced training programs, and bring about an orderly and an effective approach to creating and maintaining a supply of competent workers available to meet the rapidly increasing needs of war industry. Training Within Industry promotes these policies.

APPROVED ON AUGUST 21, 1942
MANAGEMENT-LABOR POLICY COMMITTEE
WAR MANPOWER COMMISSION

R. Conrad Cooper,
Wheeling Steel Corporation.

H. A. Enoch,
The Pennsylvania R. R. Co.

Frank P. Fenton,
American Federation of Labor.

John P. Frey,
American Federation of Labor.

Lt. Col. Kenneth Gardner,
N. Y. Shipbuilding Corp.

R. E. Gillmor,
Sperry Gyroscope Co., Inc.

Clinton S. Golden,
United Steel Workers of America.

John Green,
Industrial Union of Marine and Shipbuilding Workers of America.

R. Randall Irwin,
Lockheed Aircraft Corporation.

George Masterson,
United Association of Journeymen Plumbers and Steamfitters.

Walter P. Reuther,
United Automobile, Aircraft, and Agricultural Implement Workers of America.

C. J. Wheeler,
Hibbard, Spencer, Bartlett & Co.

Mr. Fenton, Mr. Gillmor, Mr. Irwin, and James J. Matles, of the United Electrical and Radio Workers (alternate for Mr. Golden), are members of the Advisory Subcommittee for liaison between the Training Within Industry Division of the Management-Labor Policy Committee.

Since September 1940, Training Within Industry has been guided by a Committee of Labor and Management Advisers which issued the first "TWI" Policy statement in April 1941. The above policy statement continues the policy originally established. The members of the original committee were: M. F. Burke, C. S. Ching, E. O. Davidson, Clinton S. Golden, John Green, M. H. Hedges, R. Randall Irwin, W. G. Marshall, K. F. Ode, Walter P. Reuther, E. J. Robeson, and John E. Rooney.

WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY

ORGANIZATION

Headquarters: Room 4762, Social Security Building
Fourth St. and Independence Ave. SW., Washington, D. C.
Executive 4660

Headquarters Consultants
Industry
Education

Director C. R. Dooley
Associate Director Walter Dietz
Assistant Directors M. J. Kane, William Conover

Headquarters Advisers
Labor
Management

Planning and Development
Walter Dietz
George Jaquet
Frances Kirkpatrick

Field Supervision
C. R. Dooley
M. J. Kane
William Conover
Leonard Gappa
H. H. Blomeier

Personnel, Office Procedure, Fiscal Matters
L. W. Emerson

TYPICAL DISTRICT

DISTRICT OFFICE
District Representative
Assistant Representative
Training Specialists

ADVISERS
Labor
Management

PANEL MEMBERS
Technical and Training Consultants From Industry and Representatives From Apprenticeship and Other Related Government Agencies

22 District Representatives—93 Assistant Representatives and District Training Specialists—98 Advisers From Labor and Management, 549 Panel Members, Loaned by Industry, Located in 224 Industrial Cities

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes ten or more consultants who are not listed

DISTRICT	Office Address	Representative
1	**Northern New England** Maine, Massachusetts, Vermont, New Hampshire Room 1035, Park Square Building, **Boston, Mass.** (Hubbard 0380)	**Harry H. Kerr,** Boston Gear Works, Inc.
2	**Southern New England** Connecticut, Rhode Island Room 523, 152 Temple Street, **New Haven, Conn.** (6-5186)	**Joseph Eugene Moody,** Hat Corp. of America
3	**Upstate New York** New York State (exclusive of Metropolitan New York)	**Sterling W. Mudge,** Acting Representative
4	**Metropolitan New York** Room 2026, 11 West 42nd Street, **New York, N. Y.** (Murray Hill 3-6805)	**Sterling W. Mudge,** Socony Vacuum Oil Co.
5	**New Jersey** Room 601, 605 Broad Street, **Newark, N. J.** (Mitchell 2-1114)	**Glenn L. Gardiner,** Forstmann Woolen Co.
6	**Eastern Pennsylvania and Delaware** Room 1740, 12 South 12th Street, **Philadelphia, Pa.** (Locust 3400)	**H. W. Jones,** The Atlantic Refining Co.
7	**Maryland** Room 3306, Baltimore Trust Building, **Baltimore, Md.** (Plaza 8270)	**James H. Kahlert,** Bendix Radio Corp.
8	**Atlantic Central** Virginia, North and South Carolina Raleigh Building, Fayetteville and Hargett Streets, **Raleigh, N. C.** (2-3306)	**George G. Arthur** The Champion Paper & Fibre Co.
9	**Southeastern** Georgia, Florida, Alabama, Mississippi, Central and Eastern Tennessee Georgia School of Technology, 225 North Avenue NW., **Atlanta, Georgia.** (Hemlock 6882)	**J. E. McDaniel,** Georgia School of Technology
10	**Ohio Valley** Southern Ohio, Southern West Virginia, Kentucky Room 703-705, Union Trust Building, **Cincinnati, Ohio.** (Cherry 3740)	**Paul Mooney,** Kroger Grocery and Baking Co.
11	**Western Pennsylvania** (except Erie County) and Northern West Virginia. Room 306, Administration Building, Carnegie Institute of Technology, **Pittsburgh, Pa.** (Mayflower 2600)	**C. S. Coler,** Westinghouse Electric & Manufacturing Co.
12	**Northern Ohio** (except Lucas County) and Erie County, Pa. 4th Floor, Union Commerce Building, Chester and North Streets, **Cleveland, Ohio.** (Cherry 5875)	**Oscar Grothe,** White Sewing Machine Co.

Advisers

Districts 1 to 8, inclusive

Labor Advisers—	Management Advisers—	DISTRICT
Joseph J. Kelleher, Worcester Industrial Union Council J. Arthur Moriarity, Boston Typographical Union	Clarence G. McDavitt, New England Tel. & Tel. Co. Everard Stubbs, Fellows Gear Shaper Co.	1
J. H. DeCarrillon, International Association of Machinists Thomas Kearney, International Brotherhood of Electrical Workers	Carl A. Gray, Greenby Manufacturing Co. Richmond Viall, Brown & Sharpe Mfg. Co.	2
(To be appointed)	(To be appointed)	3
Thomas J. Lyons, N. Y. State Federation of Labor Gustave A. Strebel, N. Y. State Industrial Union Council John J. Breman, Alternate, Building and Construction Trades Council	D. J. Hoose, The Texas Co. R. E. Gillmor, Sperry Gyroscope Co., Inc. J. C. Ward, Jr., Fairchild Engine & Airplane Corporation	4
Peter J. Flynn, Industrial Union of Marine & Shipbuilding Workers of America Carl L. Gylling, International Association of Machinists	Thomas R. Jones, American Type Founders, Inc.	5
Anthony Martinez, Steel Workers Organizing Committee Carl Bersing, Philadelphia Industrial Union Council Charles Seitl, International Association of Machinists David Williams, Pennsylvania Federation of Labor	Earl Sparks, Metal Manufacturing Association L. B. F. Ravcroft, Electric Storage Battery Co.	6
Frank J. Bender, State Director, CIO F. N. Kershaw, International Association of Machinists	Alonzo G. Decker, Sr., The Black & Decker Mfg. Co. Stewart Cort, Bethlehem Steel Co. Charles R. Hook, Jr., Rustless Iron and Steel Co.	7
E. L. Sandefer, Director, CIO T. A. Wilson, North Carolina Industrial Commission	Edward J. Robeson, Jr., Newport News Shipbuilding & Dry Dock Co. Frederick W. Symmes, Union Buffalo Mills Co.	8
Paul R. Christopher, Tennessee Industrial Union Council Dewey L. Johnson, Georgia Federation of Labor	Ben Sinclair, Georgia Power Co. James F. Vance, Tennessee Coal, Iron & Railroad Co.	9
John J. Hurst, Central Labor Council	Lewis M. Crosley, The Crosley Corporation George A. Sevier, The Lunkenheimer Co.	10
Clinton Golden, Steel Workers Organizing Committee William G. Short, International Brotherhood of Electrical Workers	W. G. Marshall, Westinghouse Electric & Manufacturing Co. Henry D. Scott, Wheeling Steel Corporation	11
Albert Dalton, Cleveland Building and Construction Trades Council	Ray S. Livingstone, Thompson Products Co. Warner Seeley, Warner-Swasey Co.	12

FIELD ORGANIZATION

★ In addition to the names shown, each district staff includes ten or more consultants who are not listed

DISTRICT	Office Address	Representative
13	**Michigan** and Lucas County, Ohio 15 Boulevard Building, 1st floor, 7310 Woodward Avenue, **Detroit,** Mich. (Trinity 1-5500)	**M. M. Olander,** Owens-Illinois Glass Co. **O. F. Carpenter,** Associate Representative
14	**Indiana** (except Lake and Porter Counties) Room 1428, Circle Tower Building, **Indianapolis,** Ind. (Market 9411)	**A. E. Sinclair,** P. R. Mallory & Co.
15	**Illinois** (except 3 counties adjacent to St. Louis, Mo.) and 28 counties in Wisconsin, 2 counties in Indiana, and 1 county in Iowa Room 2600, 20 North Wacker Drive, **Chicago,** Ill. (Andover 3600)	**Paul A. Mertz,** Sears Roebuck & Co.
16	**North Central** Wisconsin (except 28 counties), Minnesota, North Dakota, South Dakota, Iowa (except 1 county), Nebraska 326 Midland Bank Building, **Minneapolis,** Minn. (Maine 3244)	**Ernest L. Olrich,** Munsingwear, Inc.
17	**South Central** Missouri, Kansas, Oklahoma, Arkansas, Western Tennessee, and 3 counties in Illinois Room 603, Shell Building, **St. Louis,** Mo. (Central 4206)	**A. Earl Wyatt,** Laclede Gas Light Co.
18	**Gulf District** Texas and Louisiana Room 3201, Gulf Building, **Houston,** Tex. (Capitol 7201)	**Harold Fletcher,** Hughes Tool Co.
19	**Mountain District** Colorado and Wyoming 7th Floor, 511 Sixteenth Street, Kittredge Building, **Denver,** Colo. (Tabor 3173)	**George M. Kirk,** Colorado Fuel & Iron Corp.
20	**Pacific Southwest** Southern California, Arizona, New Mexico 755 Western Pacific Building, 10315 Broadway, **Los Angeles,** Calif.	**William K. Hopkins,** Columbia Pictures Corp.
21	**Pacific Central** Northern California, Nevada, Utah Room 702, Newhall Building. 260 California Street, **San Francisco,** Calif. (Exbrook 0369)	**Alexander R. Heron,** Crown Zellerbach Corp.
22	**Pacific Northwest** Washington, Oregon, Idaho, Montana Room 957, Stuart Building, Fourth and University Streets, **Seattle,** Wash. (Eliot 6404) **Oregon District** Bedell Building, Room 1006, **Portland,** Oreg. (Broadway 0380)	**Maj. Gen. H. G. Winsor,** Puget Sound Power & Light Co.

Labor Advisers—	Management Advisers—	DISTRICT
John Reid, Michigan Federation of Labor Walter Reuther, United Automobile Workers of America	Willis H. Hall, Detroit Board of Commerce Frank Rising, Automotive Parts & Equipment Manufacturers, Inc.	13
James C. Robb, Congress of Industrial Organizations Roy Creasey, International Brotherhood of Electrical Workers	Henry C. Atkins, Jr., E. C. Atkins & Co. Lothair Teetor, The Perfect Circle Co.	14
George E. Mischeau, Steel Workers Organizing Committee Albert G. Fox, Sheet Metal Workers Union Local 115 Otto A. Jirikowic, International Association of Machinists Paul H. Steffes, United Auto Workers Local 75 Terry Kandal, Alternate, United Auto Workers Local 719	Harold F. North, Swift & Company L. J. Parrish, A. O. Smith Corporation. H. A. Schauer, Alternate, Hasco Valve Co.	15
Sander Genis, Congress of Industrial Organizations George Lawson Minnesota Federation of Labor	Harry W. Clark, Hugo Manufacturing Co. Fred Crosby, American Hoist & Derrick Co. C. L. Mandelert, Chippewa Fall Woolen Mill Co. Herbert J. Miller, Minnesota State Resources Commission Gust Olson, Jr., Deere & Co. Karl Vogel, Omaha Steel Works	16
Joseph P. Clark, Central Trades & Labor Union of St. Louis and vicinity A. F. Kojetinsky, Steel Workers Organizing Committee Lloyd M. McBride, Alternate, Steel Workers Organizing Committee Joseph A. Waldron, Alternate, Metal Polishers, Buffers, Platers & Helpers International Union	Wilbur B. Jones, St. Louis Chamber of Commerce Walter Siegerist, Medart Co.	17
Simson Hyde, Congress of Industrial Organizations A. S. McBride, American Federation of Labor	David Harris, Humble Oil Co.	18
Martin Cahill, Wyoming Federation of Labor Floyd F. Miles, Labor-Counsellor	Harold F. Silver, Silver Engineering Works, Inc. Charles O. Voigt, The Stearns-Roger Manufacturing Co.	19
Cornelius J. Haggerty, California Federation of Labor James G. Thimmes, Steel Workers Organizing Committee	David T. Babcock, Blythe & Co., Inc. Garner A. Beckett, Riverside Cement Co. A. H. Young, California Institute of Technology	20
J. Scott Milne, International Brotherhood of Electrical Workers Lee R. Smith, Regional Labor Relations Rep., War Production Board	James R. Moore, Moore Dry Dock Co. T. S. Petersen, Standard Oil Co. of California Julian F. Arntz, Bethlehem Steel Co.	21
H. S. McIlvaigh, Tacoma Central Labor Council D. E. Nickerson, Oregon Federation of Labor	Ernest R. Hinton, Olympia Steel Works W. Walter Williams, Continental, Inc. Morris H. Jones, Jones Lumber Co. Ross McIntyre, International Sales & Produce Co.	22

High Spots in the "TWI" Program

1 This is ***not a policy-making program.*** It gives no consideration to whom an employer shall hire, how many, or when.

2 It is a practical ***advisory service,*** dealing only with training methods and procedures. It disseminates the latest, factual information based on ***current experience of industry.***

3 It is ***concerned only with workers in key mills,*** where training is carried out right on the job within plants. ***Workers learn by doing—produce while learning!***

4 It shows employers how to ***get skilled operation from all grades*** of workers through intensive instruction at the job level.

5 It aids in the development of ***practical plans for upgrading*** workers to higher skilled jobs as rapidly as their ability warrants.

6 It renders specific aid to plants in the ***development of foremen and leadmen*** so that they become better supervisors.

7 "TWI" cooperates with the Apprentice-Training Service in promotion of attention to the development of all-around skilled craftsmen.

8 It works for ***closer cooperation*** between local industry and local governmental placement and training in order to meet employers' definite needs.

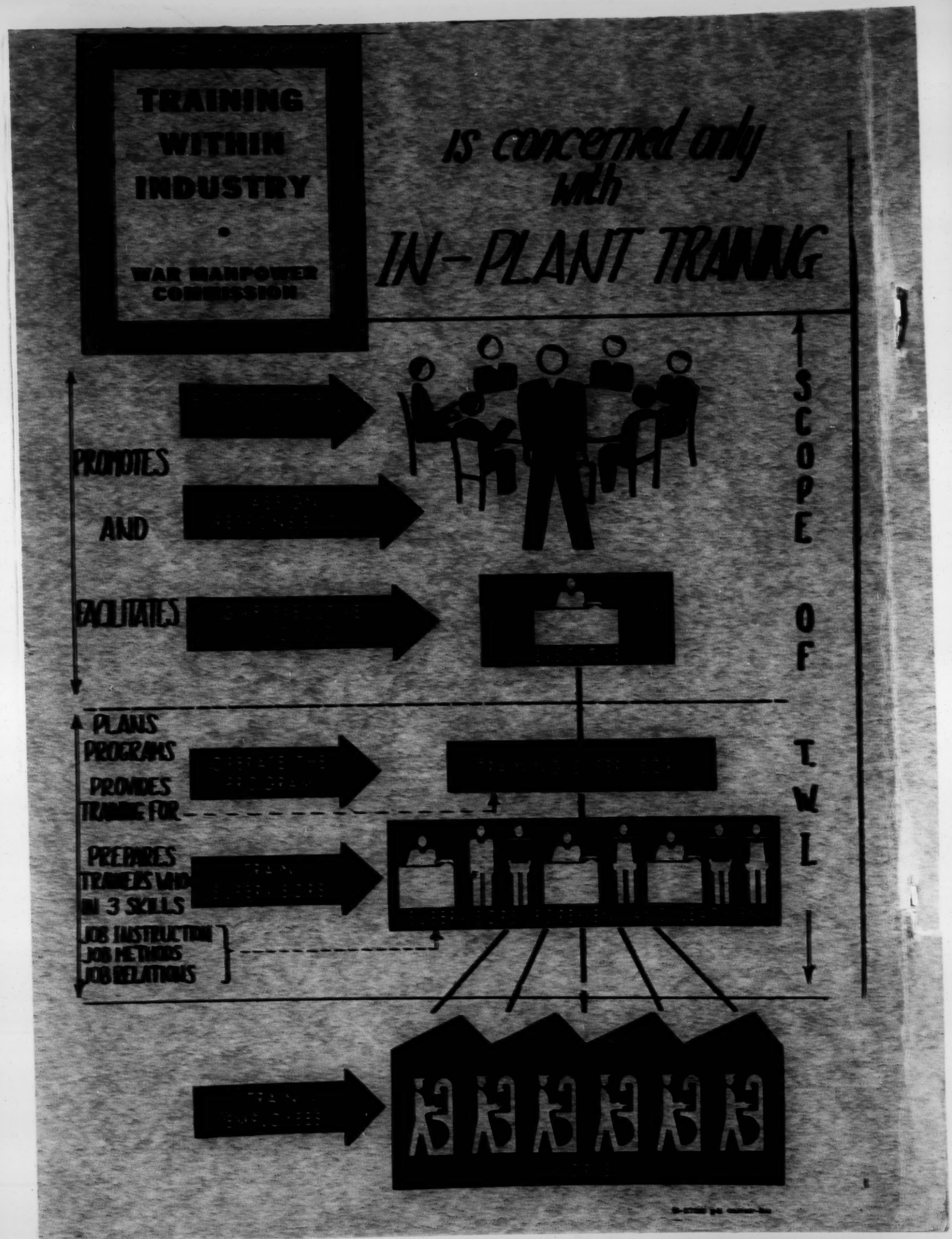
9 The entire "TWI" program is carried on with the active and ***backing of both labor and management.***

10 Training Within Industry service is rendered by ***experienced industrial personnel and training experts loaned to the War Manpower Commission by industry itself.***

CONTACT YOUR NEAREST "TWI" DISTRICT OFFICE FOR COMPLETE DETAILS

U. S. GOVERNMENT PRINTING OFFICE [illegible]

[redacted]


TRAINING WITHIN INDUSTRY
•
WAR MANPOWER COMMISSION
is concerned only with
IN-PLANT TRAINING
PROMOTES
AND
FACILITATES
SCOPE OF T W I
PLANS PROGRAMS
PROVIDES TRAINING FOR
PREPARES TRAINERS WHO IN 3 SKILLS
JOB INSTRUCTION
JOB METHODS
JOB RELATIONS

Commonwealth of Pennsylvania
DEPARTMENT OF PUBLIC INSTRUCTION
Harrisburg

Return to 1854

all this same information applies elsewhere too

May 15, 1942

To County and District Superintendents,
Supervising Principals, High School Principals,
and Directors of Vocational Education:

I desire to call your attention to the Pennsylvania State School of Aeronautics, which the State Board for Vocational Education is conducting to advance the war effort. The U. S. Army Air Corps, represented by the Middletown Air Depot, is cooperating in the conduct of this school and has supplied the initial equipment for the program. This school is housed in the Farm Show Products Building, Harrisburg.

All students are secured through the United States Civil Service Commission for the Air Corps. If a student has sufficient mechanical experience, he will be employed as a general mechanic helper and will receive $1500 per year from the start of the training period. If he has insufficient experience, he will be employed as a mechanic learner at $900 per year from the start of the training period. Upon successful completion of the preliminary training course, the mechanic learners will be promoted to the position of general mechanic helpers at $1500 per year. Subsequent promotions follow the requirements as contained in the Civil Service examinations.

The courses offered are Engine Repair, Final Assembly, Fuselage, Electric Repair and Installation, Sheet Metal, Engine Installation, Hydraulics, Propeller, and Welding.

Each one of these courses gives detailed instruction in the work of a particular department only, and the student stays in that department during the entire course. In short, he specializes. When he completes the course, which he does in two to four months, he is sent to the Middletown Air Depot, or one of its sub-depots, where he continues the work in which he has trained.

Any one interested in this program may secure application blanks, Form Number 4000 ARC, from any local post office, or by writing to the Pennsylvania State School of Aeronautics. A Civil Service Announcement, covering regulations and requirements, is available with application forms. The age limit is 17-50 years, except for minors 16 years of age who have graduated from a senior high school, and includes males and femeles.

It is suggested that each school should have posted on its bulletin board a copy of the examination announcements which can be secured through the local post office.

Sincerely yours

Francis B. Haas

Francis B. Haas
Superintendent of Public Instruction

Training secured through consulting the following:

State director of vocational education (U.S. Office of Education approves)
Pre-employment and supplementary in public schools
(shop work, assembly work, drill or punch press operator, etc.)
Engineering courses in universities, colleges, technical institutions
(draftsmen, inspectors, blueprint readers, production supervisors)
For these courses, some ~~xxxx~~ require a background of at least a year of college work, some require 2 years of college, but others require only high school graduation with better than average amount of mathematics and either physics or chemistry
Tuition free; in latter, student pays cost of drafting instruments, or etc.

Civil Service district office for that area, for Army and Navy arsenals and air depots
Examinations to inquire about are -
Mechanic-learner; mechanic-helper;
Junior inspector-trainee; gas mask machine operator;
Minor inspector of engineering materials (ordnance);
Etc. (there sometimes is one called Manual Occupations, Female Trainee)
Training given in the arsenals, or at local public schools
Paid while in training ($75-$85, sometimes more)
Age limits sometimes 18-35

Civil Aeronautics Authority regional offices
Girls between 20 and 50 are being trained for clerical and other work in airway traffic control centers; some are already hired.

Notes: 3rd Civil Service district in Philadelphia recruiting and selecting girls for training as inspectors in radio factories, under U.S. Army Signal Corps.

In Chicago, district office of CSC training 200 women this summer in ordnance inspection (under examination "junior inspector-trainee"), who will be assigned to Chicago ordnance district thereafter; paid $1440 while in training, $1620 when assigned

In Rockford, Ill, 50 women took CSC examination (June 16) for "minor engineering aid" (trainee-inspector), to be assigned to Rockford plants having government contracts.

Washington D.C. navy yard now has 1700 jobs which are open to women.

Employment secured through consulting the following:

U. S. Employment office - both local and in nearest large city.
This is the Government agency in charge of recruiting and placing workers, and which has information on labor needs in surrounding areas.

Civil Service Commission district office.
Recruitment is still being carried on vigorously for various office positions in Washington, D.C. (and branch offices of Federal agencies). But War Department has frozen its staff for another month yet, and the Navy Department is temporarily frozen.

Application in person at all factories and establishments. This is <u>always advisable</u>. The Employment Service is not adequately staffed to carry on its regular work when special recruiting problems are being handled, and while applications are accepted they may be filed away because attention to that type of work is impossible at that particular time.

Many lines of work formerly done only by men are now being taken over by girls, and the chains or large companies in need of replacing men with girl s are doing their own recruiting without finding it necessary to call on the local Employment Service office. Cab drivers; truck drivers; tractor drivers; (International Harvester is training girls); gas station attendants; street car motormen; hotel positions such as bell captains, purchasing agents, mail clerks; office work of all kinds; dairy works; switch tenders, car tracers, dispatchers, telegraphers and ticket agents in whole country-wide transportation system (just developing); etc. In the largest woman-employing manufacturing industry - textiles - reports show women replacing men on many jobs.

In the Engineering, Science, and Management War Training program (ESMWT), full-time and part-time courses are offered to meet local and national needs for technical and supervisory personnel. These courses are available to high-school graduates and persons with more advanced preparation at about 200 institutions throughout the Nation. To stimulate training, the cost of tuition is met by the Federal Government; and the only expense incurred by the trainee is for travel, subsistence, books, and minor supplies. Excluding board and lodging, the typical enrollee pays less than $10 for his training.

More than nine-tenths of the courses in ESMWT are part-time, given outside working hours for the benefit of those who, while already employed, are seeking to prepare themselves for positions of greater responsibility and usefulness in the war effort.

The typical full-time course comprises from 400 to 800 hours of intensive class and laboratory work, often calling for as many as 6 hours' attendance daily. Such courses are intended primarily to fit those with little or no technical education or experience for work as assistants in laboratories, drafting rooms, engineering departments, and accounting and personnel offices of war industries. Among the full-time courses offered during the last fiscal year were: Fundamentals of engineering, aeronautical engineering, motion study and work simplification, introduction to tool design, surveying and topographic mapping, analytical chemistry, industrial supervision, and fundamentals of radio.

To meet critical personnel shortages of industries with war contracts, such courses as ship drafting, textile finishing and dyeing, optics and optical instruments, airplane stress analysis, and theory of machine design have been offered in the areas where the need was apparent.

Nation-wide needs for certain types of training have been discovered, and quite standardized courses designed to meet them. Some of these courses were offered simultaneously in several States. Among the courses offered in response to widespread needs were: Chemistry of powder and explosives, ordnance inspection, radio communications, industrial safety engineering, topographic map drafting, and photogrammetry. The selection of trainees for many of these courses is made by the United States Civil Service Commission; and, in some instances, the men and women selected are employed by the Federal Government when they begin training.

The U. S. Office of Education will furnish a list of the colleges and universities that are participating inESMWT; but those who wish to enroll for training should apply directly to the Engineering, Science, and Management War Training institutional representative at one of the cooperating institutions.

U. S. DEPARTMENT OF LABOR

WOMEN'S BUREAU

WASHINGTON

VOCATIONAL TRAINING OF DEFENSE WORKERS

Dr. Cornell, Department of Education --- May 7, 1942 1/

Total trained from beginning of program to Feb.28,1942

	Total	Women	Percent Women
Pre-employment and refresher courses	968,551	33,624	3.5%
Supplementary courses	1,047,094	6,701	0.6%
Total	2,015,645	40,325	2.0%

Number on active roll Feb.28,1942

Pre-employment and refresher courses	170,551	10,990	6.4%
Supplementary courses	176,528	2,182	1.2%
Total	347,079	13,172	3.8%

1/ Latest figures available.

ANOTHER INDUSTRY TRAINING WOMEN WORKERS

The present war emergency is making it necessary for many companies to consider the hiring and training of women for work which has heretofore been done chiefly or entirely by men. Among these, reports Olga Howell, of the Department's Kansas City Regional Office, is the Corn Products Refining Co.

Company Normally Employs Men

Corn Products has approximately 640 employees; about 8% of these are women. Most of the men employees have worked for the company for many years. Less than 5% of them are unmarried, and those of draft age are deferred because of dependents. Few have been lost to service or to war work.

For the most part, the work of the company is highly technical, calling for analytic chemists or for engineers, or is such as to require heavy manual labor. The policy of the company has been to hire male workers even for the clerical and stenographic forces.

Policy Changes by War

Realizing that, if the war should continue over a long period, it would become increasingly necessary to release men from their jobs, the company started several months ago to place women in clerical and stenographic positions. Women are also being hired for work in the laboratory and on the small-package filling line.

Having in mind the probable forced conversion to a more general employment of women, the personnel department made a survey of the plant on January 23, 1942. It was decided that, if it should become necessary, women could be used to a much greater extent in the small-packaging department, in the laboratory, and in the general office. By making some changes, women could be employed also in the sugarhouse, the powerhouse, the storeroom, the shipping and receiving department, and in fire-protection work.

Conversion Costs Would Be Considerable

It was believed that in some cases three women would be required to do the work of two men. Using women in all these departments would bring the number of women workers up to about 30%.

The cost of converting the machinery would be negligible, but the cost of providing adequate locker and rest rooms would be large. One new locker room for men is just being completed at a cost of $25,000, and the cost of converting this for the use of women is being considered. This one would be inadequate, however, if a good start were made toward hiring women.

On-the-Job Training Practiced

The personnel manager said: "Should this war continue 10 years, women could be the engineers. If they have enough ability to run the railroad trains in Germany, they can run anything we have here." Women engineers would put the percentage of women employed up to about 50% of the total. From there on, greater conversion of machinery, equipment, and methods would have to take place before women could handle the job.

Training at Corn Products is on-the-job training, for both men and women. The first job is a simple one; and while working, the employee gives much time to learning the next higher job. This type of training is necessary because of the highly specialized character of the work.

An employee of a Portland (Oreg.) shipbuilding company is the first female shipyard worker ever to christen an ocean-going vessel. The woman, who is an electrician's helper at the yard, had recently replaced her husband (also employed by the shipyard as foreman in charge of electrical installations) as the family breadwinner when he became ill.

NAVY-YARD JOBS FOR WOMEN

The Charleston Navy Yard recently issued a call for women who have reached their twentieth birthday but have not passed their thirty-fifth birthday and who have completed a course in training for any mechanical trade or occupation, according to C. W. Martin, Manager, Charleston (S. C.) District Office of the Department of Commerce.

Rating and Wage Scales

First such call to be issued by the local yard, the summons is expected to result (1) in the immediate application of a larger number of women for the special courses now being offered in the Murray Vocational School under the Federal Office of Education; and (2) in the replacement in many of the shops, and especially in the lighter-work trades, of men by the women.

The rating to be given the women in the work at the yard will be "helper training, female," and they will be started at the minimum wage scale of $4.72 a day. Advancement to wage scales of $5.20 and $5.68 a day will follow as quickly as the women employees show ability to hold down the jobs given them. Time and a half will be paid for all overtime (over 40 hours a week).

Judging Applicants

No written test will be given applicants. They will be judged from a review of their educational training and upon the showing of certificates from the Federal Office of Education that they have satisfactorily completed an intensive course in a training program in one or more of the mechanical trades and occupations.

Such certificates are presented through the courses offered at the Murray Vocational School, Charleston. The courses run for 6 weeks each. There is a possibility that this time may be cut before long, in order that speedier action can be taken at the yard.

At the present time few women are employed in the shops at the yard. They are used as "shop clerks," working in the storerooms or offices. Their work is a form of training, in that it familiarizes them with the names and uses of various tools, parts of machines, and other equipment.

NEW REGULATIONS FOR HOME WORK IN WOMEN'S APPAREL INDUSTRY

After November 30, 1942, no industrial home work in the women's apparel industry may be done in or about a home, apartment, tenement, or room in a residential establishment except by such persons as have obtained special home-work certificates from the Wage and Hour Division of the U. S. Department of Labor.

No worker may do industrial home work for more than one employer in the women's apparel industry. Home-work employment in another industry, however, will not be a bar to issuance of a home-work certificate in the women's apparel industry.

These regulations, which are pursuant to the wage order establishing a minimum wage rate of 40¢ an hour in the women's apparel industry, were issued by the Administrator of the Wage and Hour Division after extended investigation by officials of that Division.

The new regulations provide for issuance of certificates authorizing employment of industrial home workers. These certificates are to be issued upon application, which must be made on forms provided by the Wage and Hour Division and must show that the worker was engaged in industrial home work in the women's apparel industry prior to March 5, 1942, or is now or will be engaged in such industrial home work under supervision of a State vocational rehabilitation agency or of a sheltered workshop. It must be shown that the worker is unable to adjust to factory work because of age or physical or mental disability, or is unable to leave the home because her presence is required there to care for an invalid.

Certificates issued under these regulations shall be valid for not more than 12 months from date of issuance, or for such shorter time as may be fixed in the certificate. Any certificate may be revoked at any time for cause. Violation of any provision of the Fair Labor Standards Act shall be sufficient ground for revocation.

27037

ADVANCE RELEASE: For FRIDAY MORNING papers, March 6, 1942

WAR PRODUCTION BOARD

Labor Division

WPB-442

A major step toward attaining goals in the Production Drive is the kind of rapid, efficient training of new workers reported by two big shipyards, an aircraft factory and a machine tool plant, Sidney Hillman, WPB Labor Director, said today.

"These companies are taking advantage of the government's facilities for training, both on and off the job," Mr. Hillman said.

He commended the records of these firms in training former clerks, filling-station attendants and other civilian industry workers to turn out the weapons of war.

"This is the most practical way to obtain skilled machine operators and mobilize the great numbers of workers necessary to meet the new 1942 war output schedules," he said.

"The program calls for using existing craftsmen at their best skills, and promoting or up-grading other workers to take over operations requiring lesser skills."

The four companies cited by Mr. Hillman, with a brief description of their training activities, as reported to the Training-Within-Industry and Defense Training Branches of WPB's Labor Division, are as follows:

California Shipbuilding Company

Ship construction by this Company started last May. The Company has now launched its eleventh ship, and three more launchings are scheduled for this week. The Company now has 22,000 employees. Their present hirings are at the rate of 1,000 per week; this rate of hiring will continue for another month. Only 700 of the present employees had previous shipbuilding experience. Workers are being recruited from various trades, and approximately 15,000 from pre-employment classes. Up to the present time approximately 14,000 employees have taken some form of supplemental training and 5,000 are now taking in-plant training courses. In addition, approximately 7,000 employees are now attending supplemental courses outside of plant.

Consolidated Shipbuilding Company.

The Consolidated Shipbuilding Company is conducting a number of classes on off-shift hours for the men employed in that concern. Of the 6,500 workmen now in the Yard, only about 100 ever worked on shipbuilding before. All have been trained in the Yard and on-the-job, plus the supplementary instruction in the Yard given after work by lead men and foremen at company expense. Those receiving this instruction do so on their

own time, and those giving the instruction are paid at overtime rates. At present, about 1,500 workers are attending supplementary classes three hours per day, three days per week. A considerable number of the new employees have had brief pre-employment training in vocational schools in a number of other nearby cities.

Lockheed Aircraft Corporation.

During the year just ended, the Lockheed Aircraft Corporation increased its staff of production workers from 12,000 to 51,000 plus. More than 20,000 workers have taken supplemental training in the public vocational schools. At the present time, the training enrollment in these schools is approximately 10,000. All of these workers are being trained for work with the Lockheed Corporation. The Company had in operation a training-within-industry program in which 2300 supervisors are enrolled. In fact, all the production workers employed by the Company are given training on the job. The Company is upgrading its tool room workers, and all of the skilled toolmakers act as instructors and supervisors of unit skill operators. All of these unit skill workers have been trained to operate a single machine and have required only a limited amount of training.

The Warner-Swazey Company.

At the beginning of 1940, the Warner-Swazey Company had a working staff of approximately 1800 persons. During 1940 the number was increased to 2803. 57% of this additional staff was composed of learners who had no previous experience. At the end of 1941, this total had been increased by 836 employees, 97% of whom were learners, bringing the total number employed to 3639. The staff was further increased in January and February.

The quality of learners which the Company was able to recruit dropped during 1941, and the Company organized a pre-learner vestibule school. The duration of vestibule training in this school is six months. At the present time 61 learners are enrolled in the course. The background of these learners is varied. These individuals were formerly shipping clerks, gasoline station attendants, rubber goods salesmen, truck drivers, etc. The only requirement for admission to the school was that they be in good health and evidence some mechanical aptitude.

The Company is upgrading its learners continuously and is developing some excellent supervisory material through this method. The results have been most satisfactory and the Company is thoroughly convinced that it can develop machine tool workers through this "learner" method.

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NAM
LABOR RELATIONS BULLETIN

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ISSUED BY THE NATIONAL ASSOCIATION OF MANUFACTURERS
IN THE INTEREST OF A BETTER UNDERSTANDING
BY INDUSTRY OF LABOR RELATIONS

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Women in War Jobs

Need for Women in War Work Poses Problems— N.A.M. Suggests Hiring, Training Techniques

A unique, on-the-spot survey of current practice in industry with regard to the employment of women in war jobs has just been completed by the N.A.M. Special meetings and employment relations conferences in ten key war-producing centers, stretching from New York as far west as Oklahoma City, were held for the purpose of exploring the many problems of personnel and employment relations involved in the employment of two, three, or more million women in war industries.

Executives from more than 550 companies producing war goods participated in these "women clinics" held over a period of one month in New York City, Chicago, Oklahoma City, Wichita, Omaha, Chicago Heights, St. Paul, Milwaukee, Evansville, and Grand Rapids.

These meetings were held in the form of round-table discussions, each participant contributing information and observations based on the practical experiences with the problem in his own plant. These companies represented a fairly typical cross section of the nation's war industries; and the wide diversity of problems and practices explored resulted in a thorough and comprehensive analysis of the subject.

There emerged from these ten special conferences a wealth of factual information from which the N.A.M. developed a list of sound practices that have met the test of practical experience in everyday operation.

The practices presented below represent a sound approach to the problem of employing women in war industries.

N. A. M. Suggestions

After thorough study of the many factors that enter into the employment and training of large numbers of women for war jobs, the N.A.M. presents the following suggestions based on sound practices.

I. We believe that women can satisfactorily fill all or most jobs performed by men, subject only to the limitations of strength and physical requirements. However, although true, this statement should not preclude recognition of the fact that jobs which by nature are particularly dirty, dusty, hot, or wet, are not desirable for women and should not be performed by women until after other more suitable jobs have been filled.

II. There is little difference between men and women as regards their satisfactory performance in industry. Sound employment and personnel practices are applicable to both men and women and no emphasis should be placed on any distinctions between them as workers.

III. Wage Policies

In the matter of wage policies we advocate the principle of equal pay for equal performance by

women. In effectuating this policy it is essential that consideration be given to methods whereby "equal work" may be measured. In this connection we recommend that industry give thought to the wider use of such techniques as job analysis and evaluation to determine the precise nature of the job and the elements comprising it.

In approaching this problem certain pertinent factors are apparent, among them:

1. The practical difficulties of measuring what purports to be the same job without using such techniques as job analysis and evaluation to determine whether the work is strictly comparable. Experience shows that women in a factory generally require more servicing than men in the way of "setting-up," lifting, and the like.
2. The higher rate of absenteeism among women as compared to men.
3. The greater susceptibility of women to fatigue making it necessary that they be allotted more rest periods.
4. The general inability to upgrade women to better jobs such as foremen, supervisors, etc. This prevents the best development of industrial workers.
5. The shorter industrial life of the woman worker.
6. The designation of certain jobs in a company —because they are more suitable and desirable for women—as "women jobs" and which are therefore performed only by women.

IV. Preliminary Planning

A. These preliminary steps may be helpful in approaching the problem:

1. Estimate the number of male workers who will be lost during the coming year, by departments and on a monthly basis.
2. Determine how many of these men can be replaced by women.
3. Estimate the number of new jobs that will open up during the year ahead for which women can be employed.

B. Experience has shown that it is considered better practice to have a group of 10 or 15 women start on an operation of a job rather than bring only two or three women into a department. This does not necessarily mean segregation of women, but represents a more practical way of changing over "men jobs" to "women jobs" and also simplifies the personnel problems involved in dealing with women.

V. Recruiting of Women

A. Potential Labor Supply

1. At the present time the female labor market is more than adequate throughout the country as a whole, including as it does women who have heretofore done industrial work and those who are now seeking to enter the factory for the first time. There are, however, some areas where the supply is beginning to show signs of dwindling.
2. It is important to differentiate between women who are suited for light, precision, clean work and the type who would be more suitable for some "dirty" jobs, such as machine operation, tasks that involve some oil and dirt, etc. For the latter work, women from rural areas would be more suitable.
3. Consideration should be given to the physical capacities of women: whether tall or short, slight of build or more robust, etc.
4. There is a very meager supply of technically trained females for laboratory, engineering, and research work.
5. In many communities, the United States Employment Service is proving useful in screening out unsuitable applicants and referring only good prospects.

B. Application Forms

1. The same application form is suitable for both men and women.
2. In addition, it may be desirable for the female applicant to give the name of her husband, his birthplace, his citizenship status, etc.

C. Interview Arrangements

1. It is generally desirable that women be interviewed by women, wherever possible.
2. In companies where the individuals handling personnel are all men, it might be possible to use the supervisor of women or the forelady to do some interviewing in the employment office at certain periods of the day.
3. A number of companies have found it sound practice to have a woman applicant interviewed by both a man and a woman so that a more objective appraisal of the woman's qualifications can be obtained.

D. Selection Techniques

1. The value of temperament testing for women should receive careful consideration as an aid in the selection of applicants. It is possible through these tests to determine the "nervous" reaction of women to monotonous, repetitive jobs, and also to screen out certain

individuals who, because of their temperament, will not adjust properly to their environment.

2. Aptitude testing as a selection technique is valuable for women as well as for men. In certain cities, the United States Employment Service is giving aptitude tests to applicants and, guided by the requirements of individual companies, is referring only such applicants as will be suitable for employment.

VI. Factors to Consider in Selecting Suitable Jobs for Women

A. Physical Examinations

1. Pre-employment physical examinations are as important for women as for men, and where they are used the examination is much the same for both sexes.
2. The physical factors of strength and fatigue must be given recognition in selecting women for certain jobs.

B. Work Environment

1. Considerable friction can be eliminated among work groups by selecting women who are of much the same type and have interests in common.
2. Where groups of young girls are used, it is often a stabilizing factor to have several older women included in the group.

C. Working Conditions

1. Adequate arrangements must be made in connection with safety precautions, lighting and ventilation, sanitary facilities, dressing rooms, rest rooms, lunch rooms, etc.
2. It is desirable to create pleasant, clean, and orderly surroundings.

D. Wearing Apparel

1. A diversity of practice is followed in connection with clothing for women in the factory. In some companies one uniform costume for women has proved successful, whether it be an overall or a slack suit. In other companies, three, four, or five different costumes are available from which women are free to make their selection.
2. Generally, the two-piece slack suit is preferred by women.
3. In any event, whatever clothing is worn, it is essential that the various safety factors involved be given primary consideration—no flowing skirts around machinery, no loose hair that can catch in a machine, safety shoes to prevent slipping and falling, etc.

VII. Job Analysis

Job analysis is of great importance in determining which jobs can be satisfactorily filled by women. It is essential in setting wage rates. It also enables a company to formulate definite job descriptions so that the employment office can be guided in its selection of women.

VIII. Hours of Work—State Law Requirements, etc.

A. Many states have legal requirements governing standards of working conditions for women, restricted hours of work (both as to length and time of day), and occupations. In many cases, certain state requirements regarding hours of work—overtime and shift restrictions—are being waived or modified for the duration where necessary for war production.

B. Shift Work

1. In many companies women are working on all three shifts.
2. Surprisingly, many women prefer to work the midnight shift because of the extra premiums involved.
3. Experience shows that married women lose less time from work if employed on the morning shift. A housewife working on the afternoon shift generally has less physical reserve with which to carry on her job in the factory, perhaps by reason of the fact that she has done her household duties and is tired when she comes on the job.
4. Married women with children, however, find it desirable to work on the afternoon shift so that children at home can be cared for by the husband (if he is on the morning shift) or some other member of the family.
5. However, from the health and production point of view it is desirable for married women to work on the morning shift.

IX. Preparing Plant Personnel for Influx of Women

A. It is desirable to inform supervisors, the line organization, and production workers that women are going to be employed, so as to promote the proper attitude on their part.

B. Pre-selling the idea results in a better attitude toward incoming women. The atmosphere is friendly, pleasant, and conducive to a woman's feeling "at home."

X. Induction Program

A. It is desirable to establish a definite induction program to facilitate the satisfactory adjustment of women to their new jobs. This is particularly true with regard to women who have never worked in industry before. It is vital that they be properly oriented and that they feel comfortable in their work environment.

B. It is equally important that women have confidence in their ability to perform the job and that they feel free to ask questions if occasion arises.

XI. Training

A. No particular change need be made in a company's regular training procedure. In many companies women are being trained alongside men, both being given the same instruction.

B. In starting to teach a woman a job, it is advisable not to over-estimate her background of knowledge; teach the job slowly, one point at a time; tell her about the safety hazards of the job in such a way that she will not be nervous.

XII. Supervision of Women

A. Male supervisors may require some education in the manner of dealing with women if they have never directed women before.

B. Male Supervision

1. It is generally believed that women respond better to male than to female supervision.
2. In cases where foreladies are used as the immediate supervision, it has been found helpful to have foremen as final and over-all authority in the department.

C. Women as First Line Supervision

1. Where foreladies are used as first line supervision they frequently handle routine problems concerning women effectively, often cutting the foreman's job in half.
2. Foreladies are successful in adjusting minor grievances and in handling some of the less important operating problems, thus leaving the foreman free to carry on major supervisory duties.
3. The use of competent, well-qualified women as first line supervisors has, in a number of cases, resulted in greater efficiency and output by women groups.

XIII. Miscellaneous Problems

A. Single Women vs. Married Women

1. With the increasing need for employing women workers, many companies are discarding their former policies against the employment of married women. However, rules against married women still exist in some cases.
2. A number of companies find that married women are more dependable and productive than young, single girls.

B. Absenteeism

1. Statistics show that the absenteeism of women generally exceeds that of male workers very substantially. A limited survey recently showed this to be 100% greater.
2. The absenteeism of married women exceeds that of single girls, according to this same survey. However, many companies stated that married women are more dependable and report regularly for work, whereas single girls are more prone to stay away without sufficient cause.
3. Some suggestions to overcome this greater absenteeism on the part of women:
   a. Bonus for attendance.
   b. Check-up by the company nurse after a day's absence to determine whether illness or soldiering was the cause.
   c. If the company maintains a sickness-benefit payment plan, it might be desirable, as disciplinary action, to consider the reduction of benefits for single-day absences.
   d. In some companies where a single day absence is paid for, discontinuance of this policy may bring home to employees the need for regular attendance.

C. Adequate Transportation

1. With the employment of large numbers of women, it is important to do some preliminary planning to provide adequate transportation for women who do not have easy access to the community's transportation facilities. This is particularly true for late shift workers where it may be necessary to collaborate with the community transportation system to arrange that facilities be available at the hours when women go to and from work.
2. Where plants are located in dark or unsavory neighborhoods, companies should provide protection to women until they reach transportation facilities.

D. Union Restrictions

1. Where union agreements restrict the extent to which women may be employed, it may be necessary to work out an agreement with unions to waive these restrictions.

TRAINING - 1943

May 3, 43

N. Y. T. 14 C

87 GIRLS TO STUDY RADIO ENGINEERING

First Such Contingent Will Start Courses at Purdue Today to Become Technicians

JOBS SLATED WITH R. C. A.

Company Sponsoring Program to Get Needed Aides for Work on War Contracts

Special to THE NEW YORK TIMES.

LAFAYETTE, Ind., May 2—The first contingent of women radio technicians of tomorrow—unassuming in the traditional campus clothing and low-heeled shoes—are prepared to start classes tomorrow at Purdue University. Eighty-seven girls from all parts of the country will formally open the first such training program in the radio and electronics field under sponsorship of the R. C. A.-Victor Division of the Radio Corporation of America.

After ten months of intensive technical study, the girls, whose average age is 19, will be prepared to take over jobs as engineering aides in R. C. A.-Victor's war production program.

Although the girls will live in dormitories and have the same status as undergraduates, they are R. C. A. employes and will receive a nominal salary from the radio company, according to Miss Frances Tallmadge, former associate dean of Antioch College now acting as resident adviser to the girls at Purdue.

Called R. C. A. engineering cadets, the girls are recruited from forty-five colleges in eighteen States and the company's own plants. About 500 candidates were interviewed by a flying squadron of the company's personnel representatives. The twenty-three girls selected from R. C. A. plants were factory and office workers. One, Mildred Wampler, who started as a solderer and assembler in the Bloomington (Ind.) plant, was a sub-foreman.

The course of study supervised by the war training office at Purdue, directed by Professor C. W. Beese, includes engineering mathematics, radio manufacturing processes, radio and electronic circuits, electrical drafting, shop practices and radio theory.

The engineering cadet program grew out of the need for trained radio technicians. On graduation, the cadets will be assigned to

sub-foreman.

The course of study supervised by the war training office at Purdue, directed by Professor C. W. Beese, includes engineering mathematics, radio manufacturing processes, radio and electronic circuits, electrical drafting, shop practices and radio theory.

The engineering cadet program grew out of the need for trained radio technicians. On graduation, the cadets will be assigned to R. C. A.-Victor's six plants to work with engineers and war contract executives.

Those from New York and vicinity who are enrolled follows: Bernadine A. Baiza, Hillside, N. J.; Fedora Barozzi, New York City; Bernice J. Ganer, Brooklyn; Mrs. Marta G. Gilbert, Newark; Jean Hardy, Palmyra, N. J.; Margaret Hawley, Morristown, N. J.; Carol Jackson, Newark; Kathryn Kopski, Elmhurst, L. I.; Marie Sammon, Newark; Dorothy A. Yaskewich, East Orange, N. J.; Marie Bilinsky, Hillside, N. J.; Anna Hathaway, Alfred, N. J.; Mary J. Spurry, Jersey City; Eleanor Tasterman, Haddonfield, N. J.; Helen Muenscher and Nancy Nixdorf, Ithaca, N. Y., and Edna Mandl, Trenton, N. J.

WOMAN TRAINS MEN AS ARMY MECHANICS

Former Stenographer Is in Plane Engine Unit of G. M.

INDIANAPOLIS, May 2—A war-impelled "first" in the field of industrial machinery is Mrs. Evelyn Jorgensen, newly appointed to the training school department of the Allison division of General Motors in this city.

The 36-year-old former stenographer is teaching the care, maintenance and overhaul of the Allison liquid-cooled engine, which powers America's principal aerial fighter planes, to classes of Army mechanics enrolled in the Allison service training programs which, to date, has schooled more than 26,000 mechanics. Mrs. Jorgensen has just been appointed a member of the school faculty of seventy-seven—seventy-six men and herself.

Mrs. Jorgensen, a widow and the mother of a son, 14, admits, however, that when she entered the engine school in the first Winter term this year she did not know the difference between a crankshaft and an exhaust valve. She graduated second highest in a class of twenty-six men and immediately was recommended for training to be an instructor.

It originally was solely to familiarize herself with technical engineering terms that Mrs. Jorgensen enrolled as a student in the school. In fact, she first joined G. M.'s Allison division as a stenographer. Later she was assigned as a special stenographer tabulating and analyzing "trouble reports" from field service engineers, which led her to the decision to learn more about the technical side of the engine.

In addition to her instruction work Mrs. Jorgensen is assisting in developing programs for the training of women for engine overhaul in airplane maintenance depots. She does not expect to be the only woman member of the school faculty for long, as it is the plan of A. C. Hazen, head of the school, to add additional women to his staff to meet the shortage of men teachers resulting from the Army's continuous call of more and more of the male instructors into the Army.

DIVISION OF
PRESS INTELLIGENCE
1526-14th St., N. W.

NO.

SYMBOL C

Press-Scimitar (I)
Memphis, Tenn.

DATE MAY 4 - 1943
p.

THIRD OF U. S. TOILERS WOMEN

By Year End, WMC Official Tells Engineers Club

"By the end of the year, nearly one-third of the entire labor force of the United States will be made up of women," says J. E. McDaniel, assistant director of the War Manpower Commission, who spoke at Engineers Club luncheon yesterday at Hotel Claridge.

He said the estimated labor force by then will be 65 million with 18 million of them women. With men constantly being taken by the armed forces, Mr. McDaniel said, our only salvation in the battle of production is additional training.

He outlined the six general types of training.

1. Vocational—general training in welding, riveting, etc.
2. Engineering, Science and Management War Training—for college material.
3. Training within industry—upgrading men already employed.
4. Training directors for industry—to supply needed leaders.
5. Rural war production training—teaching farmers to keep their equipment in workable condition.
6. NYA training—youth training—age limits soon to be raised.

Mr. McDaniel is a native of South Carolina. He was schooled in Europe and holds the degree of doctor of philosophy. He is director of training for the WMC in addition to his other position.

DIVISION OF
PRESS INTELLIGENCE
1526-14th St., N. W.

NO.

SYMBOL L

News
McKeesport, Pa.

DATE MAY 27 1943
p.

Heed Plea, Women Told

Women who heed the War Manpower Commission's renewed plea to "come out of the kitchen" will find in the evening technical training at the Pennsylvania State College war training center at Clairton High School an opportunity to train for work in industries engaged in turning out materials needed by the armed forces.

A campaign to get two million women to take over civilian war jobs by the end of the year means that the majority of these women will require technical training before they will be useful in industry, according to heads of the training program. The government's plea for women workers, it was stated, is directed at the non-working housewives, primarily those of 18 to 45, with no children under 16 years of age.

Registration for classes to be held in Clairton will take place next Tuesday, Wednesday and Thursday from 7 to 10 p. m. at the high school. Classes will open June 7, it was announced by John S. Devey, administrative head of the local training center.

Tuition-free courses offered men and women here include engineering drafting, ordnance inspection, manufacturing procedures for women, algebra and trigonometry, chemistry of engineering materials 1, safety engineering and the making of steel.

DIVISION OF
PRESS INTELLIGENCE
1526-14th St., N. W.

NO.

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Jersey Journal (ER)
Jersey City, N. J.

DATE JUN 14 1943

Women in War Work

War Womanpower Puts "Miss Jersey City," 16½ To 25, Into Overalls

Anticipating the demand for skilled women workers as men were called from war industries into the line of battle, the National Youth Administration, a constituent agency of the War Manpower Commission, began as early as the fall of 1941 to encourage girls between the ages of 16½ to 25 to enroll in its War Production Training Shops to take training in the type of work for which it was prophesied there would be a shortage of manpower.

Through Personnel Officer William Smith of the local N. Y. A. the following data comes:

"At the Jersey City N. Y. A. Shop, Florence St. at Bright, hundreds of youth have completed their training courses and gone into industry, others are reporting there daily for classes in arc welding and machine shop work and there is nothing amateurish about this training either.

"As pointed out by John N. Patterson, youth administrator for Region III, including New Jersey, Delaware and Pennsylvania, 'during the time the girls spend in the shops their work is guided by practical industrial foremen and the jobs undertaken by each of them must come up to specifications and pass the same inspection required of a factory-made product.'

"Visitors to the Jersey City N. Y. A. Shop, will find it running top speed all day and all night in eight-hour shifts. The average course of training is from six to eight weeks. After passing a qualifying test, the youth are ready for jobs where the manpower pinch is sharpest. This shop specializes in arc welding and machine tool operation. The youth are paid $33.28 for 208 hours of work.

"Through a recent arrangement with principals of high schools having no vocational facilities, the youth in senior grades are permitted to enroll in the N. Y. A. Shop on a part-time basis for special training. By graduation time they will have accumulated sufficient hours of training to enable them to hop, skip and jump from the commencement platforms into war plants.

"Those who have enlisted later can continue their courses of training through the summer months after graduation. To make the prospect even brighter, these part-time pupils receive $17.92 per month for taking this training to fit them for jobs.

"Over 100 students are enrolled here at the present time, some from St. Aloysius' High School in Jersey City, others from Emerson High in Union City.

"Youth interested in obtaining training in N. Y. A. War Produc-

DIVISION OF
PRESS INTELLIGENCE
1526-14th St., N. W.

NO.

SYMBOL L

Herald
Decatur, Ill.

DATE MAY 4 - 1943

WMC Head Says Women Should Take War Jobs

Women now working in unessential industries have as great an obligation to move to essential industries as men who are rapidly leaving unessential posts for jobs in war production, Harry Bellman, regional chief of the War Manpower Commission's bureau of training, asserted yesterday.

Mr. Bellman, who visited Decatur last year as a representative of the Training Within Industry program of the commission, returned to the city yesterday to confer with training officials and local personnel men and to speak before the Women's council at the First Baptist church. Since his 1942 visit to Decatur he has been named as head of all training units under the War Manpower commission in Region 6.

Changes Necessary

Men are being forced to make their moves from unessential industries by the threat of selective service, Mr. Bellman said. Women should feel that it is their duty to make the move without hanging any threats over their heads, he said.

"There have been complaints that women training for jobs in war industries have not been able to get placement upon finishing their training. They should take a longer viewpoint. It is their duty to receive the training so that they will be ready when the jobs open up for them," Mr. Bellman pointed out.

All replacements must be made in the future from three groups, Mr. Bellman said. They are: women, youths between 16 and 18 years of age, and persons physically disqualified for service in the armed forces.

Employers Shun Boys

"Some employers have taken the attitude that it is unwise to employ youths between 16 and 18 because they will be called to service within two years after they have started to work. Tests however, have shown that the boys of this age can become productive workers within a comparatively short time.

"During their training in war industry, the youths, in addition to aiding the war effort, are obtaining skills that will be valuable to them not only in the armed services but also later in peacetime," he said.

The largest reservoir of workers as yet hardly tapped is the huge group of women who are not employed, the training expert said. These women will be needed in great numbers in the months to

DIVISION OF
PRESS INTELLIGENCE
1926 14th St., N. W.

NO. _____

SUBJECT L

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"Youth interested in obtaining training in N. Y. A. War Production Training Shops should apply at the local United States Employ-

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The largest reservoir of workers as yet hardly tapped is the huge group of women who are not employed, the training expert said. These women will be needed in great numbers in the months to come and they should enter training for industry immediately, he said.

"Ninety per cent of the enrollment in training schools today should be composed of women for in a very short time one-third of all the working forces in the nation will be made up of these women," he stated.

Supervise Training

The War Manpower commission's bureau of training supervises the activities of several training programs including the NYA war training program, Engineering Science Management war training, vocational training through the State Board of Vocational Education, Apprentice training and Training Within Industry.

The technical education of a trainee is not finished when he concludes his training program and enters a war industry, Mr. Bellman said.

"It is the duty of each worker to make his education a continuous thing, even within industry, so that he can move up to a better job, thereby not only benefiting himself but also making himself more valuable to the war effort as a whole," he said.

Although the War Manpower commission must take a short-term view on the situation of training [illegible] to win the war, it

★ NEW FILMS



MIDSHIFT MOVIES, *shown to employees during lunch time, are used in many plants to maintain employee morale. Results of special survey on use of midshift motion pictures are reported below. Above, group of G. E. workers see movies in the shop.*

Midshift Movies Build Morale

MOVIES FOR entertainment are fast becoming important supplemental aids to production. Midshift movies — those screened at "lunch time" of any one shift of workers — are liked and wanted by management and workers alike, according to a survey just concluded for MODERN INDUSTRY.

While it's not now known how many plants are showing non-training motion pictures to their employees, the value of a midshift motion picture program is being better appreciated by an increasing number of companies.

But there are questions about the movies — and what to do about them — that are of interest to the plant executive who's considering a midshift movie program or who has just begun one. The whole question of non-training motion pictures and their relation to factory production is being re-studied and reëxamined throughout the country.

How do employees respond to movies? If they like midshift films, what kind of pictures do they prefer? What results, if any, has management seen stemming from midshift motion pictures?

Also, what about special hours in local movie houses for workers on swing and graveyard shifts? Is there any feeling on the part of workers or management that local movie theaters are missing any bets in failing to remain open special hours for war workers?

Answers to these and similar questions have been given MODERN INDUSTRY by executives from widely-scattered war plants of varying size, which were surveyed through the Hooper-Holmes Bureau, commercial research organization.

Here, in question and answer form, are the results of the survey of plants that now show other-than-training pictures.

What purpose does management have in showing midshift movies, and what results do they obtain?

The largest single group of replies said that pictures were shown to combat absenteeism, although one executive declared that "If workers will miss essential war work, they'll miss movies." Another significant group volunteered the fact that they show movies to build morale — in other words, workers like them, want them.

An East Coast war producer points out that a large factor accounting for the company's use of motion pictures and the type of pictures screened is to "inform our people about the War Effort, and to give our people a better understanding of the need for their work."

What do management men have to say about the kind of movies they select for showing to employees?

As between short subjects and feature-length pictures, management answers indicate a strong leaning toward short subjects, probably because they are more easily fitted into the short period of time available during lunch time in the plant: cartoons, morale films, comedies, etc.

About 75% of the plants are using shorts only; about 25% are regularly showing feature-length Hollywood pictures as well. The plants that do screen feature-length pictures, however, report that these serialized films account for 10% or less of the subjects shown, the bulk of their movie fare also being shorts.

How many of these plants have an auditorium in which to show pictures?

About 75% of the factories showing pictures have no auditorium. Films are being screened in whatever space lends itself most favorably to this use.

Do local theaters maintain special hours for swing and graveyard shifters?

More movie houses should be open at special hours, according to the bulk of replies from management. While 28% of the responding plants stated that their local theaters did open at odd hours to accommodate odd-shift workers, the remaining 72% of management replies stated that theaters weren't open at all for late-shift employees or that not enough of the theaters maintained special hours.

Of the plants surveyed, the vast majority are working two or more shifts. Here is the breakdown:

Four shifts	4%
Three shifts	58%
Two shifts	23%
One shift	15%

This indicates that management might consider checking with local theater managers (if this has not already been done) to make sure they're taking advantage of the opportunity for swing shift showings that may exist in the locality. Management might even consider flashing announcements of special hours of operation in the local theaters on the plant screen.

Judging from reports received direct from a limited number of workers, they are almost unanimously in favor of midshift movies. While they undoubtedly like motion pictures inside the plant for the same reasons that they go to them outside, a goodly number indicate that movies relax them or give them something to talk about. Entertainment pictures get a two-to-one vote over educational pictures, according to early returns from the workers themselves.

With the wide variety of films now available for midshift showings at nominal cost and the obvious benefits both to management and workers, those plants that have used films sparingly heretofore may well take the few steps necessary to launching a rounded program of midshift motion pictures.

The problem is comparatively simple for the plant that already has projection equipment on hand. Once the decision has been made to embark on a midshift movie program, the executive responsible can get in touch with the armed services for war films for war workers and with the film exchanges that rent both full-length feature films and shorts of all kinds.

For the plant without projection equipment, the problem is more difficult, especially since motion picture projection equipment is now practically unobtainable. In fact, the armed services have been scouring the country for many months, trying to discover for their own use projectors that are now idle. All current projector production is earmarked for the armed services.

It is possible, however, for a war plant to rent a projector or hire a projection service for regular showings, although in all probability this would be desired for showings once a week, for example, rather than daily. Another possibility is to get in touch with nearby plants that may have portable equipment. They may be glad to lend or rent this regularly, since projectors normally stand idle much of the time.

The successful use of midshift movies in war plants is proved. It now remains for more plants to capitalize on the know-how accumulated by those that have already proved their utility.

Reprinted from the August 15, 1943 issue MODERN INDUSTRY

Robinson
Blood



THE WALLACE THORSEN ORGANIZATION

219 EAST 49TH STREET • NEW YORK
PLAZA 9-4050

September 14, 1943

WOMEN'S BUREAU
RECEIVED
SEP 15 1943
DEPARTMENT OF LABOR

Director,
Women's Bureau of the Department of Labor,
Washington,
D. C.

Dear Madam:

Enclosed is some material concerning recreational facilities afforded workers in war plants by Midshift Movies.

Midshift Movies are 16mm size feature films (Hollywood) and shorts, screened for employees in the midshift or lunch period in a company's cafeteria, workshop or auditorium. Modern Industry Magazine, in an independent national survey, found that Midshift Movies pep up morale and reduce absenteeism, especially the daily serialization of feature-length films.

Women, especially, give appreciate Midshift Movies, since it gives them something to talk about; and I think you'll agree that women work better and harder if they have something to talk and think of in spare moments. This is one of the reasons why two women to every man are guilty of absenteeism; because they are not so well used to monotonous factory conditions, and because there are still many war plants unaware of Midshift Movies.

The New York War Manpower Commission has arranged to show our material on Midshift movies to war plants with which they are in touch. We have contacted the Washington office of this organization and may expect similar results from that direction, while the American Psychiatric Association may sponsor Midshift Movies from a medical or psychiatric viewpoint.

Would you be interested in releasing information concerning Midshift Movies to the various women counselors in the country's war plants? Incidentally Films Incorporated (world's largest distributor of 16mm movies) is our client, which partially explains our interest in Midshift Movies. We sincerely feel that Midshift Movies are of real benefit to war plants and that therefore any publicity they receive is to the country's benefit. We hope that you agree!

Yours sincerely,
Georgina Campbell
Georgina Campbell
P u b l i c i t y

R Munsm 9/9-2

SUMMARY OF VE-ND ENROLLMENT AS OF MAY 1943

PREEMPLOYMENT COURSES

Number in training

The proportion of women trainees included in the total number of preemployment trainees decreased slightly from 30.0 percent as of April 30 to 28.8 percent as of May 31. The total of 24,824 females in active training represented a decrease of 20.5 percent from the comparable April figure. Machine shop courses accounted for 8,114 female trainees, which was almost one-third of all female enrollees. There were 4,965 women trainees in aviation services courses, or 20.0 percent of the total number of women in training on May 31. Of all active machine shop and aviation services trainees, 27.3 and 34.5 percent, respectively, were women.

The number of women in training and its proportion to the total number in training in the State for some of the larger States were: New York, 3,814, or 23.1 percent; Pennsylvania, 3,103, or 29.3 percent; Ohio, 1,193, or 39.6 percent; and California, 1,129 or 22.4 percent.

New Registrations

The number of new female enrollees during the current month amounted to 14,893. This was a decrease of 18.0 percent as compared with the April figure. New registrations of women constituted 36.3 percent of all the new registrations in preemployment courses.

The four States having the greatest numbers of new female registrants, with the number and proportion to all new registrants in the State, were: Pennsylvania, 1,683, or 34.1 percent; New York, 1,528, or 28.3 percent; California, 856, or 31.3 percent; and Texas, 853, or 35.8 percent. Almost one-third of all new women registrants were reported in these four States.

The three major types of courses enrolling the greatest numbers of women were, in order of their rank: Machine shop courses, with 4,322 new female registrants, or 29.0 percent of all new female enrollees; shipbuilding courses, 3,292, or 22.1 percent; and aviation services, 3,238, or 21.7 percent.

SUPPLEMENTARY COURSES

Number in training

The total number of females in training in supplementary courses at the end of the current month, 39,619, showed a slight decrease of 0.9 percent as compared with the April 30th figure of 39,967. The proportion of women trainees included in the total of all supplementary trainees rose from 26.1 percent on April 30th to 27.6 percent on May 31st.

Aviation services courses constituted the leading type of course in terms of active female enrollment, with 20,205 women trainees. This total was 51.0 percent of all the women in training in supplementary courses and also comprised 46.7 percent of the total number of all trainees enrolled in aircraft courses. Three courses accounted for half of the female aviation trainees and were: Aircraft sheet metal - mfg., 15.7 percent; aircraft assembly - mfg., 16.9 percent; and aircraft riveting - mfg., 17.5 percent. Courses not otherwise classified (other) had an active enrollment of 6,433 women, or 16.2 percent of all the female trainees; shipbuilding had 5,750, or 14.5

percent; and machine shop courses had 4,724, or 11.9 percent.

The proportion of women included in the State totals in some of the larger States was: California, 25.3 percent; New York, 22.0 percent; and Pennsylvania, 36.2 percent. Over 35 percent of all supplementary women trainees were in these three States.

New Registrations

Supplementary courses enrolled 118,136 new trainees during the month of May, bringing the total number of new enrollees for the current fiscal year to 1,189,384. Although new registrations as a whole decreased 2.4 percent from the April figure, it is significant that the number of female new enrollments during May increased as compared with April. The number of female new enrollees increased 5.0 percent.

SUMMARY OF VE-ND ENROLLMENT

AS OF JANUARY 1943

PREEMPLOYMENT COURSES

Number in Training: The proportion of women trainees included in the total number in training seems, at least temporarily, to have leveled off. As of January 31, 55.3 percent of all trainees were women, which was the same proportion as on December 31, 1942. They were concentrated, mostly, in machine shop and aviation services courses, which accounted for 57.6 percent and 22.5 percent, respectively, of the total number of women in training. Proportionately, however, more women were enrolled in aviation services courses (46.4 percent of all enrollees in such courses) than in machine shop courses (35.7 percent of all enrollees in such courses). Among the larger courses, the highest degree of concentration of women was found in inspection and testing courses, in which 63.8 percent of all enrollees were women.

The number of women in training and its proportion to the State total for some of the larger States were as follows: California, 2,657, or 29.2 percent; Illinois, 1,558, or 27.0 percent; Michigan, 2,929, or 54.2 percent; New York, 6,042, or 30.2 percent; Ohio, 3,218, or 38.4 percent; and Pennsylvania, 5,158, or 34.2 percent.

NEW REGISTRATIONS

The number of new enrollments of women increased 25.1 percent, from 27,878 during December to 34,868 during January. About 43 percent of all new registrants were women. The six leading States in terms of numbers of new women registrants, with the number and proportion to all new registrants in the State were: California, 2,063, or 35.1 percent; Michigan, 2,400, or 64.8 percent; New York, 4,070, or 40.5 percent; Ohio, 2,066, or 40.8 percent; Pennsylvania, 3,693, or 43.2 percent; and Texas, 2,515, or 63.2 percent. These six States accounted for 47.6 percent of all new women registrants. By type of course it is found that machine shop and aviation services led all others and comprised 33.3 percent and 26.8 percent, respectively, of all new enrollments of women.

SUPPLEMENTARY COURSES

Number in Training: The degree of participation of women in the supplementary program has consistently increased month after month and by the end of January 1943, 58,053 women were in active training status. This was 23.0 percent of all persons in training as compared to 20.1 percent for the previous month. The month's increase in the number of women trainees alone amounted to 17.7 percent. Training of women in aviation services courses overshadowed all other types and accounted for 61.3 percent of

all women trainees. This group of women in training constituted an almost even one-half of all persons in training in this category. Of the 23,320 women trainees in aviation services courses, aircraft sheet metal - mfg. accounted for 18.8 percent, aircraft riveting - mfg. 17.1 percent and aircraft assembly - mfg. 15.9 percent. Other large major types of courses were machine shop, with 3,722 women trainees, or 9.8 percent of all women in active training status in supplementary courses, and shipbuilding, with 3,270, or 8.6 percent. Blueprint reading, with 2,204 women trainees, accounted for 40.7 percent of the 5,411 women attending courses not otherwise classified (other).

Some of the States reporting large proportions of women trainees were: California, 27.0 percent; Kansas, 56.1 percent; Massachusetts, 34.4 percent; Michigan, 28.8 percent; New York, 16.8 percent; Ohio, 30.4 percent; Oklahoma, 55.0 percent; Pennsylvania, 28.9 percent; and Texas, 57.5 percent. Nearly one-half of all women in training were in the following four States: California, New York, Ohio, and Pennsylvania.

New Registrations: The 108,781 new enrollments during the current month brought the total number of new registrations since July 1, 1942 to 721,707. The number of new women registrants, 32,129, represented an increase of 19.4 percent for January over December.

COPY

Training

April 16, 1943

Mr. Ben Fabin
853 Belmont Avenue
Brooklyn, New York.

My dear Mr. Fabin:

Your inquiry concerning the training of women for skilled occupations in the Navy Yard has been received. Experience in training of women, which has been most extensive in the aircraft industry, indicates that women can be given the same type of training as is given to men. In initiating the training some time must be given to acquainting them with the tools that are used and the quality of metals because they usually do not have the pick-up knowledge of tools that men possess. In one of the shipyards a small model platen and shipway are used to illustrate the operations necessary to the fabricating and assembling of a small model ship. In this yard women are being taught welding, burning, sheet metal work, shipfitting, mold loft, layout, and weld marking work.

The Portsmouth Navy Yard is reported to be doing especially good vocational training work under Lt. Commander T.E.Oldfield. Our report from this yard gives detail after women have received their training. This includes a one day induction program during which the Navy Yard policy, procedure, dress requirements safet and other matters are discussed. Talks and films are interspersed and questions answered. The Commander believes this should be a two day rather than a one day session. After 30 days of actual work in the Navy Yard, an employee, with the approval of her master, may apply for further in-training for the job she is doing. Such courses are given two hours a day, two days a week for five weeks. There a re a lso supplementary training courses which workers may take on their own time before and after the shift.

In this yard all leading men must take a 30-hour course on how to teach with special attention directed to the questions of how best to teach women.

Both in the aircraft, shipbuilding, and machine tool industries, greatest success has been achieved where the training program for women has been directly tied up to the work they are to do. That is, an analysis of the work to which they are going to be assigned is made before training is started. Then the training is related directly to the job.

Our field representatives who are familiar with what is being done in shipbuilding are now in Connecticut. We shall be glad to have them confer with you when they visit the New York Navy Yard, and we would appreciate being kept in touch with your progress.

Sincerely.

Bertha W. Mienburg
Assistant Director

Miss Robinson
4/21/43

SUMMARY OF WAR ENROLLMENT
AS OF FEBRUARY 28, 1943

PREEMPLOYMENT COURSES

Number in Training.

From July 1, 1940 through February 28, 1943 -	Total	2,182,214	- 100.0
	Women	420,278	19.3
In training, February 28, 1943 ..... -	Total	136,568	- 100.0
	Women	45,504	33.3

Machine shop and aviation services courses had the greatest numbers of women, with 36.4 percent, and 22.3 percent of all women trainees, respectively. This month, at last, women accounted for over 40 percent of all trainees in aviation service courses, and over one-third of the total in machine shop courses.

The number of women in training and its proportion to the total number in training in the State for some of the larger States were as follows: California, 2,371, or 28.3 percent; Michigan, 2,565, or 49.5 percent; New York, 6,137, or 27.2 percent; Ohio, 3,160, or 38.3 percent; and Pennsylvania, 5,510, or 34.1 percent.

New Registrations.

The 30,210 new female enrollees represented 36.9 percent of the total new enrollees during the month. There was a decrease of 13.4 percent in the number of new female enrollees during February as compared with the January figure. The five leading States in terms of numbers of new women registrants, with the number and proportion to all new registrants in the State, were: California, 1,766, or 33.0 percent; Michigan, 2,042, or 56.5 percent; Ohio, 1,850, or 44.0 percent; and Pennsylvania, 3,095, or 36.4 percent. Machine shop and aviation services courses, with 32.8 percent and 25.2 percent, respectively, of all new women trainees, were the two most popular courses enrolling women.

SUPPLEMENTARY COURSES

Number in Training.

From July 1, 1940 through February 28, 1943 -	Total	2,187,535	- 100.0
	Women	208,231	9.5
In training, February 28, 1943 ..... -	Total	170,577	- 100.0
	Women	39,950	23.4

Of the total number of active trainees approximately 13 percent were receiving preparatory training while paid by private industry, while over 23 percent were civilian personnel of the armed forces. Over half of this latter group were in training for the Army Signal Corps.

The number of women in supplementary courses continued its upward trend and at the end of February there were 39,950 active female trainees, comprising 23.4 percent of all active supplementary trainees. This was an increase of 5.0 percent over last month's active female enrollment. Over 58 percent of the women trainees were in aviation services courses, and this constituted 47.0 percent of all trainees in this type of course. Of the 23,329 women trainees in aviation services courses 4,260, or 18.3 percent, were in aircraft sheet metal - mfg., 3,602, or 15.4 percent, in aircraft assembly - mfg., and 4,101, or 17.6 percent, in aircraft riveting - mfg. Machine shop courses had 4,089, or 10.2 percent of all women trainees, shipbuilding, 3,845, or 9.6 percent, and courses not otherwise classified (other), 5,842, or 14.6 percent. Blueprint reading accounted for 40.7 percent of the last major type of course.

Some of the States reporting large proportions of women were : California, 25.2 percent of all trainees in the State; Pennsylvania, 29.8 percent; New York, 17.9 percent; Texas, 47.7 percent; Ohio, 40.7 percent. Over one-half of the women in training were concentrated in these five States.

New Registrations.

The number of new women registrants decreased 3.9 percent as compared with January.

Training:

Objections to the hiring of women were raised with regard not only to machine operation but to other jobs also. For the most part they were based on the one hand on the extraordinary skill or technical knowledge required to do the work, and on the other on the degree of physical strength or endurance necessary. Experience of other industries has shown that neither of these factors, within limits, bars employment of women. It must be pointed out also that though the machine-tool industry is not in mass production it has been forced to make certain adjustments to its recent and rapid expansion that follow the pattern of mass-production techniques and thus allow at this time the extensive employment of semiskilled labor.

In recent years large numbers of inexperienced men have been trained in the industry within very short periods, and it has been estimated that most of the men making machine tools in January 1942 had never seen the inside of a machine-tool plant 2 years before that date. In many cases the regular 3 to 4-year apprenticeship course for training all-round machinists has been practically discontinued in favor of an 18-months learnership program or a few months or even weeks of instruction on one specific machine to be operated or job to be done. By 1941 the industry had trained thousands of new men, in from 6 weeks to 4 months, to operate even the more difficult machines such as boring mills and turret lathes. Training of this kind has been intensified and has already proved in many places the feasibility in the industry of breaking down an all-round machinist's skill into its component parts. In one plant this technique yielded enough skilled men to start a third shift, thereby doubling production within 3 months' time.

This happened in an important company of Cleveland, where a learnership program lasting 2 to 6 months for each student has been in operation since 1936. Only men with technical-high-school training or a knowledge of blueprint reading and simple measuring tools were accepted. Soon, however, not even the meager background required of these learners could be counted on, and the rank and file of absolutely untrained individuals were taken in a newly organized vestibule training school, designed to give in 6 weeks general background and specialized instruction on one machine or one job. After 6 weeks the pupils in the vestibule school enter the learner course to receive advanced training that will make them skilled machine operators. In most places there is no class instruction, but all trainees learn directly on the job under the tutelage of an experienced worker. They stand beside veteran employees, watching them closely. Soon they are allowed to operate the simpler controls and then the entire mechanism, thereby advancing to the status of semiskilled operators. Within 60 to 90 days learners can be put on their own.

Women as well as men have been successfully introduced into such short-term training programs and have proved to be apt pupils. The data show that when processes are broken down sufficiently to admit on-the-job training and dilution of skill, there is no doubt of women's capacity to participate in machine-tool manufacture. The fact that larger quantities of parts are now going through machine-tool plants makes subdivision of work more practicable than ever before and allows the use of set-up men in many places, leaving the more routine work of machine operation to others. With larger lots runs tend to be longer, so some of the machine tools used can be set up for repetitive operations for which men or women are quickly trained.

U. S. Department of Labor
Women's Bureau
Washington

February 25, 1943

Training

1. Schools need trainees.

Most vocational schools in nearly all of the States are equipped to train more persons than are now enrolled in classes. Trainees are needed particularly in such acute labor shortage centers as Buffalo, New Haven, Philadelphia, Baltimore, Norfolk, Mobile, St. Louis, Detroit, Ogden, and all large cities on the Pacific Coast.

The industrial areas in which there are shortages of trainees closely corresponds with areas for which USES reports a dearth of workers acceptable to employers. Although prejudice against employment of minority groups in some areas has relaxed, there is still reluctance on the part of some war contractors to employ members of minority groups and women.

2. American Steel and Wire Company last week (December) brought their die room foremen to Cleveland, and the Training Director for the company's 17 plants, for a two-day conference. The making and re-working of drawing dies was originally done by men, but at the present time it has been turned over largely to girls. At the central die station alone (Cleveland) there are about 200 girls doing all the various operations of die making.

After emphasis on the four basic steps of instruction, and particularly on job breakdowns, some of the die making jobs were discussed and actually broken down. After a short tour of the die station, four of the men took four separate operations of one of the jobs and instructed a new girl by using the four-step method and the job breakdown sheets worked out the night before. In a period of about 30 minutes this girl had learned the job. Questioned afterwards, it was found that she had a very good idea of it.

At the conference it was evident that there should be a more consistent method of doing jobs, and that the parts and names of operations should be standardized in all plants.

3. Training for depots and stations of the armed services.

Big program in Southeast is recruitment, training and placement of thousands of aviation mechanics at the various air repair depots. Very large estimates of employment are generally given - possibly 90,000 will be needed within the next six months, and 80 percent of these may be women.

Trainees are paid 90 dollars a month for one to six months, after which they will earn $125. a month on the job. Training courses include the following: aviation motor mechanics, chassis assembly and disassembly, instrument mechanic, propeller mechanic, aviation electricians, welders, riveters, and sheet-metal workers.

Some of the training centers are at Memphis, Brookley Field, Mobile, Macon, Miami, Jacksonville, and Savannah. The school at Memphis is said to have

1800 students with 70 percent women; at Jacksonville there are about 1000 mostly women; There are 2 schools for Negroes, one at Tuskegee, and one at Mobile.

Trainees must agree to stay on the job at least 6 months after completion of training and to go any place wherever in the region they are needed.

* * * * * * *

Depots of Armed Services.

1. Richmond Air Base: Applicants for this base are trained in Harrisburg Pa. from 10 weeks to six months, and then are eligible as general mechanics' helpers at $1,600. This training is open to women.

2. Quonset Naval Air Station: Women are working three 8-hour shifts plus a half-hour lunch period, so that there is some over-lapping in coming and going, but it is reported that this does not cause confusion. They are doing all types of repair work and machine operations on airplanes. WAVES are expected to be added to the machine shop very soon, and supervisors are anxious to have them assimilated into the larger group of regular Civil Service workers without dissension.

3. Sacramento Air Base: The women are engaged chiefly in inspection. Recently a recruitment drive was conducted in three districts of Sacramento by the Girl Scouts.

4. Mt. Ranier Ordnance Depot: In the warehouse women are employed as checkers, talley clerks, locaters, parts' pickers, shipping clerks, mule and fork machining operators, truck drivers, chauffeurs, and messengers. In the base shop they are employed as upholsterers, tire repairers, in the brake and clutch department, body and frame, carburetor and ignition, lubrication and final assembly.

Employment of women in these depots and stations is becoming increasingly important.

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MVR
from Personnel file

New York Times
Sunday, April 11, 1943
Boston, Mass,

To help solve problems presented by the wartime employment of armies of women in industrial plants formerly staffed by men, Simmons College has announced a program for the training of women as industrial personnel counselors. Under this program, said to be the first of the kind offered by an American college, hundreds of women now employed in war-production plants will return to the classroom to be trained as "deans of women in industry." Industries in all sections of the East are cooperating in the movement.

The plan includes a two-week conference at the college, April 26 through May 7, to which many industrial concerns employing women have been invited to send personnel counselors and others acting in a similar capacity, and a six-week course, beginning June 21, for women now employed in war-production plants and others who desire to take up this type of personnel work.

ADVANCE RELEASE ADVANCE RELEASE

ORR- WMC - 760 PM-4487

WAR MANPOWER COMMISSION

ADVANCE RELEASE:
For Wednesday Morning Papers,
December 22, 1943

Cleared and Issued
Through Facilities of the
Office of War Information

Year-end inventories of the Apprentice-Training Service, Bureau of Training, War Manpower Commission, show that 3,300 additional plants have adopted apprenticeship and short-term training programs in the twelve months ending November, 1943, Paul V. McNutt, Chairman of the Commission announced today.

These 3,300 plants, the Chairman said, are in addition to the 28,000 other plants and establishments which had similar programs in operation prior to November, 1942. The name of each company which has adopted one or both of these types of training systems is given in the inventories.

Referring to the report made to him by William F. Patterson, Director, Apprentice-Training Service, Mr. McNutt pointed out that approximately 1,100 of the additional 3,300 plants have set up short-term training programs under which thousands of new recruits have been trained for work of limited skill on the production line; and at least 2,200 plants have adopted apprenticeship programs under which apprentices are being trained for all-round skilled work.

"These short-term training programs," Mr. McNutt said, "have helped immeasurably to build up and maintain the ranks of semi-skilled men and women in our war production plants. Apprenticeship is as essential today as it has always been in peace time to develop the all-round skilled workers who are continuously needed in every major industry." Mr. McNutt explained that there are two different kinds of apprenticeship systems in operation--area-wide systems and individual plant systems. An area-wide system covers on an average as many as 30 employers in a city, county, or larger area, while individual plant systems are designed to train apprentices employed by only one company. On the other hand, short-term training programs are almost without exception, established on an individual plant basis.

The number of apprenticeship programs, including area-wide and individual company systems in all industries--manufacturing, construction, and miscellaneous--has increased over 23 per cent during the year ending November 1943, and short-term systems have increased 650 per cent, the Chairman said.

The total number of all apprenticeship systems has increased, during the 12 months ending in November 1943, from 2,069 to 2,555. The number of area-wide apprenticeship programs has increased from 898 to 958; and the number of individual plant apprenticeship systems from 1,171 to 1,597. The total number of short-term systems has increased during this period from 175 to 1315.

The fifteen States and Territories showing the greatest increase in growth of apprenticeship systems in the past year are: Illinois, Wisconsin,

(over)

Pennsylvania, New York, New Jersey, Texas, Ohio, Hawaii, Massachusetts, Indiana, Connecticut, California, Minnesota, Louisiana, and Kentucky.

The fifteen States showing the greatest increase of short-term training programs during the past year are: Ohio, Pennsylvania, Michigan, Texas, New Jersey, Indiana, Missouri, Virginia, West Virginia, Utah, Georgia, Maryland, California, Illinois, and Washington.

War Activities in many States, notably in the South, which have been primarily agricultural until recent years, the Chairman pointed out, have been reflected in the growth of short-term training and apprenticeship programs shown by Apprentice-Training Service inventories.

(END)

OFR--WMC--760

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Friday, November 12, 1943

PM-4465

The War Manpower Commission today called attention to recommendations of its Bureau of Training for an over-all training program for women, summarized in the foreword of a bulletin entitled "Training Womanpower."

In brief, these recommendations are:

1. Each war production plant should be assisted in analyzing and determining its womanpower needs, and recognizing what training programs are necessary if these needs are to be met adequately.

2. Carefully planned programs for training should be developed by each plant, giving as much weight to this activity as to other production problems. The government training services available through the War Manpower Commission for in-plant and out-plant training of workers and supervisors should be fully utilized.

3. Public training agencies as well as private training officials should recognize the necessity for supplying complete and well-organized training to women as a substitute for job experience, which most of the women to be hired will lack.

4. Employers are urged to consult with the Regional Chiefs of Training, who are equipped to advise and assist plants concerning their training problems. Training programs best suited to meet the specific needs of individual plants or industries will be developed in cooperation with management.

5. Top management must support plant training programs to make them effective. Well-planned training will not only make a new worker a productive worker in a shorter period, but will also result in increased production output, lower loss from scrap, improved safety records, and, in many cases, lessened labor turnover. These are results which will appeal to management.

6. Women counselors should participate in planning and carrying out training programs for women workers, emphatically so in the beginning stages. Women employees should be made acquainted with all such counseling service the first day of employment.

Each agency participating in the work of the Bureau of Training made a report for inclusion in "Training Womanpower." These agencies are: Training Within Industry Service (TWI), Apprentice-Training Service (ATS), Vocational Training for War Production Workers (VTWPW), Rural War Production Training (RWPT) and Engineering, Science, Management War Training (ESMWT). The last three agencies named are administered by the United States Office of Education, Federal Security Agency. Types of courses offered are subject to the approval of the Chairman of the War Manpower Commission.

X-22773

OFF--WMC--760

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Friday, October 29, 1943

PM-4438

The War Manpower Commission's Women's Advisory Committee today recommended, as a measure vital to the Government's war production program, the immediate wide-scale development of adequate in-plant training programs for women workers.

"To develop new recruits into efficient war production workers, the War Manpower Commission is assisting industry throughout the United States in setting up over all training systems," Miss Margaret Hickey, Chairman of the Committee, explained. "But present conditions require that new impetus be given these programs at once, so as to assure their operation in or in close cooperation with a greater number of plants over the country and their adequacy to meet the needs of women workers in the individual plants.

"All women with considerable work experience are already on the job. Of those women who go to work from now on, some few will have limited work experience. But most of them will have had no industrial experience at all. To many of them every tool, machine and term will be new and strange.

"Even when a production job requires very little training for the actual performance of the work itself, some training and adjustment to factory conditions and procedures are nevertheless necessary before an inexperienced woman can be placed effectively in any department of the plant.

"To help maintain a satisfactory degree of morale and to keep women working at their highest efficiency and producing to their maximum capacity, carefully planned step-by-step training on the job should be given by well-chosen, skilled supervisors or leadmen. Most effective results have been obtained in plants where management has given as much weight to training plans as to other production problems."

On the basis of War Manpower Commission reports and studies of current employment problems and needs considered at today's session of the women's advisory group, the Committee recommended for women workers a four-fold plant training program as follows:

(1) Orientation and pre-production training.
(2) On-the-job training under trained instructors.
(3) Supplementary training for those who wish to increase their skills.
(4) Transfers and upgrading when this would be in the interests of increased war production.

To assure the proper placement, transfer and upgrading of women to replace skilled employees, counseling service, which has been tested out with valuable results to some plants, should become an important part of the personnel technique of every large plant, Miss Hickey added.

As an aid to its program of assisting industry in setting up training systems, the War Manpower Commission has just released a new bulletin prepared by its Bureau of Training under the title, "Training Women for War Work." The Bureau of Training also has compiled a series of reports from Regional Chiefs of Training which are assembled under the title, "Training Womanpower."

I-22206

ADVANCE RELEASE---- ADVANCE RELEASE

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

Advance Release, For Tuesday Afternoon Papers, September 21, 1943.

ORR--WMC--760 PM-4447

Planned Apprentice-Training programs which include both vocational and academic secondary schooling and on-the-job training are proving one answer to war industry's demands for youthful war workers in many areas, Paul V. McNutt, Chairman, War Manpower Commission, pointed out today. Apprenticeship programs providing for completion of high school, he said, have made greatest headway in California, Wisconsin, Connecticut, and Virginia. It can be anticipated that they will also become vital projects within the next few months in such States as Indiana, Illinois, Pennsylvania, New Jersey, Michigan, Texas, Louisiana, and many other highly industrialized States.

Mr. McNutt's statement was a follow-up and clarification of the joint statement of policies and standards for youth employment, signed by him as Chairman of the War Manpower Commission, Katharine F. Lenroot, Chief of the Children's Bureau, Department of Labor and John W. Studebaker, Commissioner of Education, Federal Security Agency. These overall policies and standards allow apprentice-training arrangements to be developed for high school boys of 16 and 17 years of age, who desire to enter apprenticeship and complete their high school courses at the same time. State Apprenticeship Councils and local Joint Apprenticeship Committees are cooperating with vocational school and placement authorities in adapting the procedures and standards of community work-school programs to meet the particular needs of apprentice-training for these boys.

State Apprenticeship Councils are composed equally of representatives from Management and Labor, and are under the administrative director of the State Departments of Labor.

Under an apprentice-training program a youth is given planned job training, supplemented by vocational school training in subjects which are related to the trade he is learning. State Councils require, in programs for sixteen-year-old boys, that a sufficient number of high school subjects be studied to allow them to graduate from high school. Usually completion of two years of high school is a prerequisite to signing up for apprenticeship.

X-20647

While apprenticeship cannot take care of all young people who wish to work at this time, it will be to our advantage as a Nation to see that as many youths as possible are signed as apprentices, the Chairman emphasized. It is estimated that as many as 250,000 may be included in such programs. Efforts should be made, he said, to take into apprenticeship many of the boys who have dropped out of school to work and who, without special inducements, will not return to the class room. Signed as apprentices, these boys will go back to high school as a matter of course since finishing high school is required of an apprentice worker, under the special apprentice-training program now in effect for 16 and 17-year-old boys. Those who can be trained under apprenticeship as all-round skilled workers in the crafts in which they are interested, will give us the needed highly skilled workers for the post-war future. Also boys trained in this manner will be of invaluable service to the armed forces when and if they are called to military duty, the Chairman noted.

A four-day conference in Washington, D. C., between field representatives of the U. S. Office of Education's Division of Vocational Education and the War Manpower Commission's Apprentice-Training Service has just been concluded, Mr. McNutt said. The major purpose of the conference was to discuss problems concerned with the upgrading and advancement of workers in industry. Information developed by the conference will be made available to State Apprenticeship Councils and local Joint Apprenticeship Committees, also composed of representatives from Management and Labor, State Boards for Vocational Education, and others interested in upgrading of workers in industry.

Vocational Education in the field was represented at the Washington conference by Warren A. Seeley of Nashville, Tenn., Arthur B. Wrigley of Trenton, N. J., and A. B. Anderson of Wilimington, Del., all supervisors of Trade and Industrial Education in their respective states; Joseph R. Strobel, State Director of Vocational Training for War Production Workers, Columbus, Ohio; George Rosecrans, of the State Education Department, Sacramento, Calif.; and Edward M. Claude, Special Agent Apprentice Training, U. S. Office of Education.

Field representatives from Apprentice-Training Service attending included: Scott J. McGinnis, Forth Worth, Texas; Edward C. Madsen, Milwaukee, Wis; George L. Green, Rochester, N. Y.; Joseph E. Johnson, Boston, Mass.; Thomas P. Kenney, Pittsburgh, Pa.; Robert A. Kelley, Seattle, Wash.; and John R. Newland, Senior Standards Examiner of the National Office.

George Sanders, Special Agent, the Foreman Training Section of the U. S. Office of Education, led the conference.

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ADVANCE RELEASE ADVANCE RELEASE

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

ADVANCE RELEASE: For Friday Morning Papers, September 3, 1943.

PM-4440-A

This material supplements PM 4440, released for Friday Morning Papers, September 3, 1943, on facts about the nation's womanpower, and is for use in connection with it.

In all training courses sponsored and supervised by the War Manpower Commission women are enrolled. In December, 1941, the percentage of women in the training courses was 4 percent. In May 1943 the percentage had risen to 31 percent of the total.

Vocational Training for War Production Workers

During 1942-43 the public schools of all States in war production training programs trained 679,000 women.

Premployment....374,000 women----38 percent of all trainees.

Supplementary...323,000 women----24 percent of all trainees.

Women have entered all types of courses offered except heavy electric welding, forging and blacksmithing. The largest number have been in aircraft, machine tool, shipwelding and radio communication.

Rural War Production Training

In January 1943, 15.5 percent of all those enrolled for this program were women. In February the percentage had risen to 19.2: in March it was 22.3 percent; and in April 29.9 percent.

In May, 1943, the 49,966 women who were in training constituted 34.2 percent of the total number of persons enrolled. The largest single group of female trainees,---33,657 women----or 67.4 percent of all women in active training were attending courses in processing food for farm families.

Other large groups were in the following courses:

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Poultry production courses---5,656 women or 11.3 percent of the total number of women in training.

Egg-production courses---3,620 women or 7.2 percent of the total number of women in training.

Vegetable production courses---2,721 or 5.4 percent of the total number of women in training.

Engineering, Science Management War Training

During 1940-41 women constituted only .7 of one percent of the enrollment of 120,000. (Program was limited to engineering.)

During 1941-42 women constituted 8.7 percent of the total of 483,503 enrolled. (Chemistry, physics and management added.)

During 1942-43 there developed a critical labor shortage in technically trained personnel and it became necessary to accept all women capable of training. The percentage rose to 21.5 percent of a total enrollment of 552,682.

Since December 1942 women constitute about 23 percent of total enrolees and it is believed this will remain fairly constant from now on.

Training Within Industry

To date Training Within Industry has trained approximately 725,000 workers. Of these at least 75,000 or, probably, 90,000 have been women and have successfully completed their courses. In the Army Supply Forces, where more than 110,000 supervisors of civilian personnel have completed Training Within Industry programs, the percentage of women runs appreciably higher than in most industrial establishments with a larger proportion of women employees and more women supervisors. There, again, the Army has made no distinction as to the male or female in its records of supervisors designated for training.

ADVANCE RELEASE---- ADVANCE RELEASE

MVR

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

Advance Release: For Thursday Morning Papers, August 19, 1943.

Orr - WMC - 2037 PM-4428

Regional directors of the War Manpower Commission have been instructed to urge managers of war plants to provide more training facilities for persons already on their payrolls, Chairman Paul V. McNutt announced today. This action, he explained, was taken because reports received by the Commission's Bureau of Training show a steady decline of enrollments in pre-employment courses, particularly in communities where labor shortages have become acute.

The Bureau's reports show that at the end of April, 1942, there were 104,000 enrollments in pre-employment courses in public vocational schools, in April 1943, only 49,000, and in the following month, 41,000.

Mr. McNutt said that while get-paid-while-you-learn training programs have existed in some establishments since industry turned to war production, many have been ineffectively handled. The new plan developed by the Bureau of Training will, he believes, prove more effective. He added that the need for more and better courses for men and women actually on the payrolls has now become apparent.

Regional directors have been instructed to work closely with plant managers in developing such programs and to assure them that in cases where they are needed vocational school teachers and equipment will be made available. The newer types of the planned employee training program, it was explained, may be set up in public vocational schools, in training centers or in the plant under the following conditions: the Regional or Area Director of the War Manpower Commission determines that training is necessary to increase production in occupations essential our war production, that there is no surplus of trained persons and that there is no assurance trainees for unpaid pre-employment courses can be secured. The War Manpower Commission official will then arrange for paid-training programs, using the public vocational schools or other centers, with the interested contractor or sub-contractor agreeing to pay the costs.

Trainees are men and women who meet the employment requirements. Training is given under actual or near-actual employment conditions, with comparable pay, and with the same materials, machines, tools, and production jobs of the industry. The hours of work are the same as those of industry. Jobs for trainees are arranged in a carefully planned sequence so that they will progress from those tasks "easy" and "less easy" to those "increasingly difficult" and "difficult," without appreciable strain. Standards for the completed product are the same as those in the industry.

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Four examples of paid-trainees programs which already have been worked out with the cooperation of the Commission and the industries concerned are as follows

1. Dallas, Texas, paid-trainee program conducted for the North American Aviation Corporation:

This program began January, 1943. Machine-shop training is on actual production parts. The training center, which really is a plant annex produces small parts and assemblies actually used in the planes being turned out in the main plant. The number of instructors and supervisors is 112. In training are 1,800 persons, of whom 65 percent are women. Among the men trainees are seven war veterans from Guadalcanal, all handicapped by injuries received in the fighting. Three shifts operate, with employees equally divided among the shifts. Training time varies from two weeks to three months, depending upon the type of training.

2. Wichita, Kansas, paid-trainee program conducted for Boeing Aircraft, Beechcraft, and Cessna corporations. Coleman Lamp Company also has a few trainees in the center. This program also began the first of the year. The center operates on three shifts, six days a week, giving training in machine shop, sheet metal forming, riveting, and assembling. Related-subjects are taught in adjacent class rooms. The number of paid-trainees is 750.

3. Forth Worth, Texas, paid-trainee program conducted for Consolidated Aircraft Corporation.

This program, in operating since January 26, 1943, is training 1000 women and men from 8 A.M. to midnight, six days per week, operating two shifts. Ninety percent of the trainees are women. The training center produces complete B-24 fuselage sections, with all accessories installed. Plant and Government inspectors are constantly on duty. As fast as these large parts are finished, they are moved into the factory for assembly in the regular plane assembly line. Small parts produced in the training machine and welding shop are also used in the main plant. The number of supervisors and instructors on duty in the training center is 112.

4. In Region VII, comprising the States of Tennessee, Mississippi, Alabama, Georgia, South Carolina, and Florida, a paid-trainee program is operating in 42 centers for the J. A. Jones Construction Company, engaged in shipbuilding in Palm City, Florida, and Brunswick, Georgia. This program was set in operation the latter part of May, 1943, because of the need for more welders and ship-fitters. After training is completed in these public vocational school centers, employees make arrangements with U. S. Employment Service local offices about moving to Palm City, and Brunswick.

Kelly-Maritime 60

OFFICE OF WAR INFORMATION
UNITED STATES MARITIME COMMISSION

For Immediate Release
Friday, July 30, 1943

OWI-2260

In an effort to improve the quality and quantity of shipyard welding work, the United States Maritime Commission today announced it had accepted the offer of the Lincoln Electric Company, of Cleveland, Ohio, to train and instruct welders in shipyards engaged in Maritime Commission work.

The company will furnish training facilities in Cleveland, including the necessary equipment and staff for training supervisors and teachers who will operate the various welding schools in Maritime Commission yards. The company will also provide the Commission with welding engineers to assist the yards in raising their welding standards, and will submit monthly reports to the Commission showing progress being made by the new service.

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ADVANCE RELEASE

ADVANCE RELEASE: For THURSDAY MORNING Papers, May 27, 1943.
Orr -- WMC 2037

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

PM-4394

More than 80,000 men and women have been trained for radio work in Engineering, Science, and Management War Training courses since October 1940, Paul V. McNutt, Chairman, War Manpower Commission, announced today. He added that an additional 15,000 have been enrolled in electronics courses.

These free courses, directed by George W. Case, the Chairman pointed out, are offered through more than 220 colleges and universities in more than 1,000 communities.

Mr. McNutt's statement was based on a report made to him by Dr. W. W. Charters, Chief of the Commission's Bureau of Training. Dr. Charters reported that three radio courses are most popular with trainees. These courses are: Fundamentals of Radio; Radio and Pre-radar, and Ultra-high Frequency Techniques. The course in fundamentals of radio has been offered in every State. Only high-school education is required for admission. The course in radio and pre-radar, with somewhat higher prerequisites, has likwise been greatly in demand. The course in ultra-high frequency techniques, which requires three or more years prior preparation in specialized engineering work, has been offered in several engineering schools which have the necessary special facilities.

As many as 15,000 persons have been enrolled at one time in Fundamentals of Radio, for training in the principles of radio circuits. A Signal Corps training officer notes that approximately 6,000 employees of one Signal Corps station have received this radio training. He points out that, while few of these men and women had technical knowledge, skill, or interest in radio before they were employed, they met all qualifications for assignment as inspectors, radio repairmen, specialists, and candidates for advanced training upon completion of the course.

Ultra-high Frequency Techniques, the most advanced of the radio courses, has been conducted by 69 engineering colleges participating in the program. Within the last two years, more than 2,500 have enrolled for this work. Upon completion of this training, Mr. McNutt said, a man may go into the armed forces or communications industries as a highly specialized technical expert in the manufacture, use and maintenance of extremely complex and vital radar equipment.

Mr. McNutt said that more and more women have registered for the radio courses in the last six months as a result of the increasing demand for women with radio and electronics training. The Aircraft Radio Laboratory at Wright Field alone, he added, has more than 200 women registered in courses preparing for radio jobs.

ADVANCE RELEASE

ADVANCE RELEASE: For SUNDAY Papers, May 2, 1943.
Flynn -- WMC 3336

OFFICE OF WAR INFORMATION
War Manpower Commission PM-4375

Three educational institutions have been added to the list of colleges and universities previously selected for the placement of specialized war training programs by the War Department and the Navy Department, the Joint Committee for the Selection of Non-Federal Educational Institutions announced today. The additions to the list are Chaffey Junior College, Ontario, Calif., Pasadena Junior College, Pasadena, Calif., and Central Missouri State Teachers College, Warrensburg, Missouri.

In approving the new institutions, the Joint Committee, which is composed of three representatives each of the War and Navy Departments and the War Manpower Commission, authorized the placement of additional training programs in five colleges and universities already on the approved list for other programs.

The list of approvals voted by the Joint Committee together with the types of training for which each institution was made eligible this week, follows:

For inspection and possible contract by the War Department for Basic training:

California:	Chaffey Junior College, Ontario (New addition)
	Pasadena Junior College, Pasadena (New addition)
Iowa:	Grinnell College, Grinnell

For inspection and possible contract by the War Department for Chinese Language study:

California:	University of California, Berkeley
Connecticut:	Yale University, New Haven

For inspection and possible contract by the War Department for training in high speed radio operation:

Illinois:	Illinois Institute of Technology, Chicago

For inspection and possible contract by the Navy Department for Basic V-12 training:

Missouri:	Central Missouri State Teachers College, Warrensburg (new addition)

For inspection and possible contract by the Navy Department for Pre-medical training:

New Jersey:	Princeton University, Princeton

For Inspection and possible contract by the Navy Department for Pre-radar training:

New Jersey:	Princeton University, Princeton

In making its announcement the Joint Committee said it is anticipated that few, if any, additional institutions will be needed for the Army and Navy specialized war training programs.

Dr. Edward C. Elliott, President of Purdue University and one of the representatives of the War Manpower Commission is Chairman of the Joint Committee.

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OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Tuesday, April 6, 1943

PM-4355

Because of increased pressure of duties as President of Purdue University, Dr. Edward C. Elliott has submitted his resignation effective immediately as Chief of the Professional and Technical Service of the Bureau of Training, War Manpower Commission Chairman Paul V. McNutt announced today.

Dr. Elliott will continue temporarily to represent the WMC as Chairman of the joint committee for the selection of non-federal educational institutions. This joint committee composed of three representatives each of the War Department, the Navy Department and the War Manpower Commission is responsible for the selection of colleges and universities which the Army and Navy utilize in the conduct of their specialized war college training programs.

Accepting Dr. Elliott's resignation, Chairman McNutt said in a letter addressed to Dr. Elliott:

"I want to tell you with what regret I learn that you find it necessary to return to Purdue University to resume actively your duties in that institution.

"You have done an outstanding piece of work for the War Manpower Commission in developing our program for the utilization of colleges and universities and in cooperating with the Armed Services in developing a program in these institutions for specialized training. The task has been a big one and has required great tact and wisdom. I shall always be grateful to you for your assistance and counsel during the formative stages of these programs.

"I hope that in spite of the heavy duties which will resume at the University you will still find it possible to give us such advice and help as possible. Since you are thoroughly familiar with the activities of the Commission which have been under your supervision, your aid here will be of greatest value."

X-13211

ADVANCE RELEASE

ADVANCE RELEASE: For THURSDAY AFTERNOON Papers, April 1, 1943.
McKinney - WMC 2053

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

PM-1345

The public vocational schools and the National Youth Administration have trained more than 30 times as many persons for specific war production jobs since June 30, 1941, as were trained by the vocational schools alone during the last war, Paul V. McNutt, Chairman of the War Manpower Commission, announced today.

During the last war the vocational schools trained 60,000 persons for war industries, Mr. McNutt said. By January 31 this year, more than five million persons had been trained by the vocational schools and the U. S. A.

Mr. McNutt stated that reports received by Dr. W. W. Theisen, chief of the Commission's Bureau of Training, show that in the 2,500 public vocational schools cooperating with the War Manpower Commission through the U. S. Office of Education, enrollments in courses furnishing training in skills needed for war industries had amounted to 4,125,500 (million) through January 31. During the same period the National Youth Administration gave training in unit skills needed in war industries to 1,100,000 (million) young men and young women some of whom also received related training in the vocational school program.

The 2,500 vocational training schools are now operating at a rate which, if continued, would provide training in preemployment courses given men and women before they enter war plants and supplementary training for workers after they are placed in war industry reaching in an aggregate of 2,500,000 (million) during the current calendar year.

The National Youth Administration is currently operating at a rate which would furnish training in war industrial skills to about 400,000 during the same period.

"The vocational schools and the National Youth Administration are doing an essential war job," Chairman McNutt said. "They are training men and women for war industries at the rate of 250,000 per month. Together with the colleges and universities which are training manpower both for the Armed Forces and for war industries and the Training Within Industry Service, the Apprentice-Training Service and the Vocational Agricultural schools, they are devoting themselves to one single important task - that of helping win the war in the shortest possible time.

"The demands for trained manpower are so urgent that every effort must be exerted and built to insure on the greatest rate at which men and women are being trained for war jobs but to accelerate it.

"In the huge stream of workers that must move in ever increasing numbers into war industries this year are large numbers of women and men who have never been in or near a war plant. Millions of persons now outside war industry must move into the most busy of war production workers. To these and to all who can profit from expert instruction in war skills, the vocational schools of the Bureau of Training offer ... in wartime absolutely free."

(War)

X-12501

The public vocational schools, the Chairman explained, are mobilized for war training operations in the Bureau of Training under two separate programs. In one, known as the Vocational Training for War Production Workers, are the 2,500 public vocational schools training men and women for war industry. The other program is known as Vocational Training for Rural War Production Workers.

The colleges and universities cooperating with the Bureau of Training operate under the Engineering, Science and Management War Training program. This agency provides training of college grade for technical workers employed in industry. This training includes courses in engineering, chemistry, physics and production supervision.

Two of the Bureau's services - Training Within Industry and Apprentice-Training-work directly with industry in the solving of its training programs.

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ADVANCE RELEASE: For SUNDAY Papers, March 28, 1943.
McKinney - WMC- 2033

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION PM-4348

The number of colleges and universities approved for placement of specialized war training programs by the Army and Navy has been increased by the addition of five institutions, bringing the number approved to an aggregate of 488, the Joint Committee for the Selection of Non-Federal Educational Institutions announced today.

In making its announcement the committee stated that with the addition of the five new institutions, it had about completed the task of selecting colleges and universities for the War Training program.

"With the list of institutions announced as of this date," the Committee said, "it now appears probable that the Army and Navy will have had assigned to them for inspection and possible negotiation of contract nearly enough colleges and universities to provide adequate facilities for the Army Specialized Training Program and the Navy College Training Program. Changes will no doubt be made in some instances in the light of inspections, and a few more institutions may be added to the list as replacements."

ADVANCE RELEASE

The five colleges and universities which were approved for inspection and possible contract by the Navy Department for Basic Training are: University of Idaho, Southern branch, Pocatello, Idaho; Louisiana Polytechnic Institute, Ruston, Louisiana; Central College, Fayette, Missouri; Missouri Valley College, Marshall, Missouri; Southeast Missouri State Teachers College, Cape Girardeau, Missouri.

In addition to adding the five new institutions to the eligible list, the committee approved DePauw University, Greencastle, Indiana and Juniata College, Huntington, Pa., for inspection and possible contract by the Navy Department for Basic Training. It also approved the University of Notre Dame, Notre Dame, Ind., for inspection and possible contract by the Navy Department for Engineering training. The last three institutions had been approved previously for other programs.

To date, the Joint Committee, which is composed of three representatives each of the War Department, the Navy Department and the War Manpower Commission, with Dr. E. C. Elliott of the War Manpower Commission as Chairman, has approved an aggregate of 1457 programs for the two service departments. Nine hundred and sixty-two were approved for the War Department and 495 for the Navy Department. In all cases the committee simply approves colleges and universities for the placement of certain designated programs. The actual inspections, negotiations of contracts and decisions as to whether institutions will be utilized is left to the Army and Navy.

(Over)

The broad and varied utilization that is to be made of colleges and universities in the conduct of the war training programs is indicated by a table prepared by the Committee which lists the types of programs and the numbers of colleges and universities which may be used in each program. This table follows:

Service	Program	Institutions
Army	Basic, Army Specialized Training Program	197
"	R.O.T.C.	140
"	Advanced Engineering	97
"	Pre-Medical and Pre-Dental	50
"	Medical and Basic Medical Sciences	72
"	Dental	28
"	Veterinary	10
"	Area and Language Study	20
"	Personnel Psychology	13
"	WAAC Trainees	9
"	Other	92
Army Air Forces Cadets		156
"	Meteorology	34
"	Other	5
Navy	Basic V-12	131
"	Engineering	49
"	Pre-Medical and Pre-Dental	66
"	Medical and Basic Medical Courses	43
"	Dental	27
"	V-5-V-7-C.	21
"	Flight Preparatory	80
"	Women Reserves (WAVES)	10
"	Radio	12
"	Other	73

Because of the difficulties and the additional expenses involved in maintaining on the same campus similar training programs for both the Army and the Navy, the Committee has decided, to designate the naval facilities for a unit program to one branch only, wherever possible. In line with this policy the naval facilities in Advanced Engineering at certain institutions have been assigned as follows:

At CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa., to the War Department;

At THE UNIVERSITY OF MISSOURI, Columbia, Missouri, to the War Department.

ADVANCE RELEASE

B. Smith
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ADVANCE RELEASE: For SUNDAY Papers, March 14, 1943 PM-4337
McKinney-WMC-749
Flynn-WMC-749

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

Additional assignments of colleges and universities for inspection and possible use for war training programs were announced today by E. C. Elliott, chairman of the Joint Committee for the Selection of Non-Federal Educational Institutions.

This is the fifth such list issued by the committee. Latest additions to the list follow:

To the War Department for Dental Training:

Massachusetts: HARVARD DENTAL SCHOOL, Boston

To the War Department for Area and Language study:

Connecticut: YALE UNIVERSITY, New Haven

To the War Department for training in Personnel Psychology in the Army Specialized Training Program:

New York: CORNELL UNIVERSITY, Ithaca

To the War Department for Basic Training in the Army Specialized Training Program:

Massachusetts: AMHERST COLLEGE, Amherst

To the Navy Department for training in Naval Architecture:

Michigan: UNIVERSITY OF MICHIGAN, Ann Arbor

To the Navy Department for Basic Training on the V-12 program:

Connecticut: YALE UNIVERSITY, New Haven

New Jersey: PRINCETON UNIVERSITY, Princeton

Because of the many difficulties and the additional expenses involved in maintaining on the same campus training programs for both the Army and the Navy, the Joint Committee designates the total college facilities for certain programs in any given institution to one service only, wherever possible.

In line with this policy and modifying previous announcements, the total facilities in Advanced Engineering have now been assigned as follows:

At YALE UNIVERSITY, New Haven, Connecticut, to the Navy Department.

At PENNSYLVANIA STATE COLLEGE, State College, Pennsylvania, to the War Department.

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Flynn-WMC-2036

OFFICE OF WAR INFORMATION
War Manpower Commission

For Immediate Release
Tuesday, March 2, 1943

PM-4325

A third list of colleges and universities, which have been declared eligible for use by the War and Navy Departments in the conduct of their basic and specialized war training programs, was announced today by the Joint Committee for the Selection of Non-Federalized Educational Institutions.

Today's announcement raised the aggregate number of institutions approved by the Joint Board for the placement of training programs by the War and Navy departments to 435.

A total of 238 institutions was included in the third list as eligible for the placement of war training programs. Of this number 137 had been included in previous lists as approved for the placement of other types of War and Navy training programs, resulting in a net increase of 101 in the number of eligible colleges and universities.

The Joint Committee is composed of three representatives each from the War and Navy Departments and the War Manpower Commission. Dr. E. C. Elliott, President of Purdue University and chief of Professional and Technical Service of the Bureau of Training, War Manpower Commission is chairman.

In each of its announcements of eligible lists of colleges and Universities, the Joint Committee has stated that the placement of an institution upon an approved list for a specific war training program is no guarantee that the War or Navy Departments will utilize the institution.

The Joint Committee, by agreement between the War Department, the Navy Department and the War Manpower Commission, selects the Institutions and approves them for certain specified programs such as those for basic training and engineering.

The Committee will continue to approve other institutions and in some instances additional training programs for institutions already approved. Already many colleges and universities have been approved for the placement of more than one program.

Under the terms of the general order under which the Joint Committee was appointed, the War and Navy Departments may enter into new contracts only with educational institutions on the committee's eligible lists. Renewal or replacement of contracts will be cleared through the Joint Committee. The Army and Navy was operating between 600 and 700 projects in non-federal educational institutions before the Joint Committee was appointed.

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X-11155

For inspection and possible contract by the Navy Department for Basic Training on the New Navy College Program, V-12.

Alabama:	HOWARD COLLEGE, Birmingham
Arizona:	ARIZONA STATE TEACHERS COLLEGE, Flagstaff
Arkansas:	ARKANSAS A & M COLLEGE, Monticello
California:	COLLEGE OF THE PACIFIC, Stockton
	LOS ANGELES CITY COLLEGE, Los Angeles
	OCCIDENTAL COLLEGE, Los Angeles
	UNIVERSITY OF CALIFORNIA, Berkeley
	UNIVERSITY OF CALIFORNIA, Los Angeles
	UNIVERSITY OF REDLANDS, Redlands
Colorado:	COLORADO COLLEGE, Colorado Springs
	WESTERN STATE COLLEGE OF COLORADO, Gunnison
Connecticut:	TRINITY COLLEGE, Hartford
	WESLEYAN UNIVERSITY, Middletown
Dist. of Col:	AMERICAN UNIVERSITY, Washington
Florida:	UNIVERSITY OF MIAMI, Coral Gables
Georgia:	EMORY UNIVERSITY, Emory University
	MERCER UNIVERSITY, Macon
Illinois:	ILLINOIS STATE NORMAL UNIVERSITY, Normal
	ILLINOIS WESLEYAN UNIVERSITY, Bloomington
	NORTHWESTERN UNIVERSITY, Evanston
Indiana:	DENISON COLLEGE, Richmond
	EVANSVILLE COLLEGE, Evansville
	INDIANA STATE TEACHERS COLLEGE, Terre Haute
	PURDUE UNIVERSITY, West Lafayette
	UNIVERSITY OF NOTRE DAME, Notre Dame
	WABASH COLLEGE, Crawfordsville
Iowa:	CORNELL COLLEGE, Mt. Vernon
	LUTHER COLLEGE, Decorah
	ST. AMBROSE COLLEGE, Davenport
	UNIVERSITY OF DUBUQUE, Dubuque
Kansas:	BETHANY COLLEGE, Lindsborg
	COLLEGE OF EMPORIA, Emporia
	SOUTHWESTERN COLLEGE, Winfield
	WASHBURN UNIVERSITY, Topeka
Kentucky:	BEREA COLLEGE, Berea
	MURRAY STATE TEACHERS COLLEGE, Murray
Louisiana:	SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette
	TULANE UNIVERSITY OF LOUISIANA, New Orleans
Maine:	BOWDOIN COLLEGE, Brunswick
Maryland:	MT. SAINT MARY'S COLLEGE, Emmitsburg
Massachusetts:	COLLEGE OF THE HOLY CROSS, Worcester
	HARVARD UNIVERSITY, Cambridge
	WILLIAMS COLLEGE, Williamstown
Michigan:	ALMA COLLEGE, Alma
	CENTRAL MICHIGAN COLLEGE OF EDUCATION, Mt. Pleasant
	GENERAL MOTORS INSTITUTE, Flint
	UNIVERSITY OF MICHIGAN, Ann Arbor
	WESTERN MICHIGAN COLLEGE, Kalamazoo

Minnesota:	GUSTAVUS ADOLPHUS COLLEGE, St. Peter
	ST. MARY'S COLLEGE, Winona
Mississippi:	MILLSAPS COLLEGE, Jackson
	MISSISSIPPI COLLEGE, Clinton
Missouri:	NORTHWEST MISSOURI STATE TEACHERS COLLEGE, Maryville
	PARK COLLEGE, Parkville
	WESTMINSTER COLLEGE, Fulton
Montana:	CARROLL COLLEGE, Helena
	MONTANA SCHOOL OF MINES, Butte
Nebraska:	DOANE COLLEGE, Crete
	PERU STATE TEACHERS COLLEGE, Peru
New Hampshire:	DARTMOUTH COLLEGE, Hanover
New Jersey:	DREW UNIVERSITY, Madison
New Mexico:	UNIVERSITY OF NEW MEXICO, Albuquerque
New York:	COLGATE UNIVERSITY, Hamilton
	CORNELL UNIVERSITY, Ithaca
	HOBART AND WILLIAM SMITH COLLEGES, Geneva
	HOFSTRA COLLEGE, Hempstead
	ST. LAWRENCE UNIVERSITY, Canton
	UNION COLLEGE, Schenectady
	UNIVERSITY OF ROCHESTER, Rochester
North Carolina:	DUKE UNIVERSITY, Durham
	LENOIR-RHYNE COLLEGE, Hickory
	UNIVERSITY OF NORTH CAROLINA, Chapel Hill
North Dakota:	STATE TEACHERS COLLEGE, Minot
	STATE TEACHERS COLLEGE, Valley City
Ohio:	BALDWIN-WALLACE COLLEGE, Berea
	BOWLING GREEN STATE UNIVERSITY, Bowling Green
	DENISON UNIVERSITY, Granville
	JOHN CARROLL UNIVERSITY, Cleveland
	MIAMI UNIVERSITY, Oxford
	OBERLIN COLLEGE, Oberlin
	OHIO WESLEYAN UNIVERSITY, Delaware
	COLLEGE OF WOOSTER, Wooster
Oregon:	WILLAMETTE UNIVERSITY, Salem
Pennsylvania:	BLOOMSBURG STATE TEACHERS COLLEGE, Bloomsburg
	BUCKNELL UNIVERSITY, Lewisburg
	FRANKLIN & MARSHALL COLLEGE, Lancaster
	LOCKHAVEN STATE TEACHERS COLLEGE, Lockhaven
	MUHLENBERG COLLEGE, Allentown
	PENNSYLVANIA STATE COLLEGE, State College
	SWARTHMORE COLLEGE, Swarthmore
	TEMPLE UNIVERSITY, Philadelphia
	UNIVERSITY OF PENNSYLVANIA, Philadelphia
	URSINUS COLLEGE, Collegeville
	VILLANOVA COLLEGE, Villanova
Rhode Island:	BROWN UNIVERSITY, Providence
South Carolina:	NEWBERRY COLLEGE, Newberry
	UNIVERSITY OF SOUTH CAROLINA, Columbia
Tennessee:	CARSON-NEWMAN COLLEGE, Jefferson City
	MILLIGAN COLLEGE, Milligan College
	UNIVERSITY OF THE SOUTH, Sewanee
Texas:	NORTH TEXAS AGRICULTURAL COLLEGE, Arlington
	RICE INSTITUTE, Houston
	SOUTHWESTERN UNIVERSITY, Georgetown
	TEXAS CHRISTIAN UNIVERSITY, Fort Worth

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Utah:	BRIGHAM YOUNG UNIVERSITY, Provo
Vermont:	MIDDLEBURY COLLEGE, Middlebury
Virginia:	EMORY AND HENRY COLLEGE, Emory
	HAMPDEN-SYDNEY COLLEGE, Hampden-Sydney
	UNIVERSITY OF RICHMOND, Richmond
Washington:	GONZAGA UNIVERSITY, Spokane
	UNIVERSITY OF WASHINGTON, Seattle
	WHITMAN COLLEGE, Walla Walla
West Virginia:	BETHANY COLLEGE, Bethany
Wisconsin:	LAWRENCE COLLEGE, Appleton

To the Navy Department for training in Diesel Engineering

North Carolina:	STATE COLLEGE OF AGRICULTURE AND ENGINEERING OF THE UNIVERSITY OF NORTH CAROLINA, Raleigh

For inspection and possible contract by the Navy Department for Specialized Naval Training

Massachusetts:	BABSON INSTITUTE, Boston

For inspection and possible contract by the Navy Department for training Women Reserves (WAVES)

Ohio:	MIAMI UNIVERSITY, Oxford

For Inspection and possible contract by the War Department for Basic Training in the Army Specialized Training Program:

Arkansas:	HENDRIX COLLEGE, Conway
California:	PACIFIC UNION COLLEGE, Angwin
	STANFORD UNIVERSITY, Stanford
	UNIVERSITY OF CALIFORNIA, Berkeley
Colorado:	UNIVERSITY OF DENVER, Denver
Connecticut:	YALE UNIVERSITY, New Haven
Illinois:	UNIVERSITY OF CHICAGO, Chicago
	UNIVERSITY OF ILLINOIS, Urbana
Indiana:	PURDUE UNIVERSITY, Lafayette
	UNIVERSITY OF INDIANA, Bloomington
Iowa:	UNIVERSITY OF IOWA, Iowa City
Maine:	BOWDOIN COLLEGE, Brunswick
Maryland:	JOHNS HOPKINS UNIVERSITY, Baltimore
	WESTERN MARYLAND COLLEGE, Westminister
Massachusetts:	HARVARD UNIVERSITY, Cambridge
Michigan:	UNIVERSITY OF MICHIGAN, Ann Arbor
	WAYNE UNIVERSITY, Detroit
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
Missouri:	ST. LOUIS UNIVERSITY, St. Louis
Nebraska:	CREIGHTON UNIVERSITY, Omaha
New Jersey:	PRINCETON UNIVERSITY, Princeton
New York:	CORNELL UNIVERSITY, Ithaca
	HAMILTON COLLEGE, Clinton
	UNIVERSITY OF BUFFALO, Buffalo
Ohio:	OHIO STATE UNIVERSITY, Columbus
	UNIVERSITY OF DAYTON, Dayton
	WESTERN RESERVE UNIVERSITY, Cleveland
	XAVIER UNIVERSITY, Cincinnati

Pennsylvania:	ALLEGHENY COLLEGE, Meadville
	HAVERFORD COLLEGE, Haverford
	UNIVERSITY OF PENNSYLVANIA, Philadelphia
	UNIVERSITY OF PITTSBURGH, Pittsburgh
	WASHINGTON AND JEFFERSON COLLEGE, Washington
Tennessee:	VANDERBILT UNIVERSITY, Nashville
Virginia:	COLLEGE OF WILLIAM AND MARY, Williamsburg
Washington:	UNIVERSITY OF WASHINGTON, Seattle
	WALLA WALLA COLLEGE, College Place
Wisconsin:	UNIVERSITY OF WISCONSIN, Madison

For inspection and possible contract by the War Department for Training in Personnel Psychology in the Army Specialized Training Program.

California:	
	STANFORD UNIVERSITY, Stanford
	UNIVERSITY OF CALIFORNIA, Berkeley
Illinois:	UNIVERSITY OF CHICAGO, Chicago
	UNIVERSITY OF ILLINOIS, Urbana
Indiana:	PURDUE UNIVERSITY, Lafayette
Iowa:	UNIVERSITY OF IOWA, Iowa City
Massachusetts:	HARVARD UNIVERSITY, Cambridge
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
Ohio:	OHIO STATE UNIVERSITY, Columbus
Pennsylvania:	UNIVERSITY OF PENNSYLVANIA, Philadelphia
	UNIVERSITY OF PITTSBURGH, Pittsburgh
Washington:	UNIVERSITY OF WASHINGTON, Seattle

For inspection and possible contract by the War Department for Area and Language Training in the Army Specialized Training Program.

California:	POMONA COLLEGE, Pomona
	STANFORD UNIVERSITY, Stanford
	UNIVERSITY OF CALIFORNIA, Berkeley
Colorado:	UNIVERSITY OF DENVER, Denver
Illinois:	UNIVERSITY OF CHICAGO, Chicago
Indiana:	INDIANA UNIVERSITY, Bloomington
Iowa:	UNIVERSITY OF IOWA, Iowa City
Maryland:	JOHNS HOPKINS UNIVERSITY, Baltimore
Massachusetts:	HARVARD UNIVERSITY, Cambridge
Michigan:	UNIVERSITY OF MICHIGAN, Ann Arbor
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
New Jersey:	PRINCETON UNIVERSITY, Princeton
New York:	CORNELL UNIVERSITY, Ithaca
Ohio:	OHIO STATE UNIVERSITY, Columbus
Pennsylvania:	UNIVERSITY OF PITTSBURGH, Pittsburgh
Washington:	UNIVERSITY OF WASHINGTON, Seattle
Wisconsin:	UNIVERSITY OF WISCONSIN, Madison

For inspection and possible contract by the War Department for Pre-Medical Training:

California:	PACIFIC UNION COLLEGE, Angwin
	STANFORD UNIVERSITY, Stanford
	UNIVERSITY OF CALIFORNIA, Berkeley
Colorado:	UNIVERSITY OF DENVER, Denver
Connecticut:	YALE UNIVERSITY, New Haven
Dist. of Col:	GEORGETOWN UNIVERSITY, Washington
Illinois:	UNIVERSITY OF CHICAGO, Chicago
	UNIVERSITY OF ILLINOIS, Urbana

X-11155

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OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

Advance Release: For Sunday Papers, February 7, 1943 PM-4305

A statement giving the initial list of non-federal educational institutions, (schools, colleges and universities), approved for utilization by the War and Navy Departments for the specialized training of men and women needed for the Armed Forces was issued today by the Joint Committee (War Department, Navy Department, War Manpower Commission) For the Selection of Non-Federal Educational Institutions. A total of 291 separate educational institutions is included on the list.

In making its list public, the joint committee cautioned that the institutions included in the initial statement represent only a portion of the total number of educational institutions which eventually will be approved for specialized training for the armed forces. It stated that many applications for placement on the approved list have been received from other schools and colleges upon which action has not yet been taken.

The statement of the committee and the list of institutions is attached.

Recently the Army and the Navy, with the approval of the Chairman of the War Manpower Commission, announced plans for the utilization of the Nation's educational facilities and personnel for the specialized training of men needed by the Armed Forces. A Joint Committee has been created with authority to select non-Federal educational institutions for the war training programs. This Committee is composed of three representatives from the Army, three from the Navy, and three from the War Manpower Commission. The Committee will operate under rules and regulations prescribed by the Chairman of the War Manpower Commission after consultation with the Secretary of War and the Secretary of the Navy.

The Committee has approved the first groups of institutions for the placement of the indicated training programs. It must be clear, however, that the actual contracts will be let only to those institutions whose facilities prove acceptable to the designated branch of the Armed Services and to whom the proposed contracts are acceptable.

The Committee will continue to approve other institutions and in some cases additional training programs for institutions already approved. Every institution in the country is being considered for possible use. Therefore, no institution not approved up to the present time should conclude that its facilities will not be used. Representatives of institutions are advised not to make special pleas for their particular institutions, as all of the available facilities are now being canvassed.

All contracts made by the Army and Navy for training before the creation of the Committee will continue in force. The two Armed Forces have between 600 and 700 such training projects already operating in non-Federal institutions. Most of these are in colleges and universities. When contracts expire, their renewal or replacement will clear through the Joint Committee:

The placements approved to date are as follows:

To the War Department for training Engineers

Alabama:	ALABAMA POLYTECHNIC INSTITUTE, Auburn
	UNIVERSITY OF ALABAMA, University
Alaska:	UNIVERSITY OF ALASKA, College
Arizona:	UNIVERSITY OF ARIZONA, Tucson
Arkansas:	UNIVERSITY OF ARKANSAS, Fayetteville
California:	STANFORD UNIVERSITY, Stanford University
	UNIVERSITY OF CALIFORNIA, San Francisco
	UNIVERSITY OF SANTA CLARA, Santa Clara
Colorado:	COLORADO SCHOOL OF MINES, Golden
	COLORADO STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ft. Collins
	UNIVERSITY OF DENVER, Denver
Connecticut:	UNIVERSITY OF CONNECTICUT, Storrs
	YALE UNIVERSITY, New Haven
Delaware:	UNIVERSITY OF DELAWARE, Newark
Dist. of Col.:	GEORGE WASHINGTON UNIVERSITY, Washington
	CATHOLIC UNIVERSITY OF AMERICA, Washington
	HOWARD UNIVERSITY, Washington
Florida:	UNIVERSITY OF FLORIDA, Gainesville
Georgia:	GEORGIA SCHOOL OF TECHNOLOGY, Atlanta
Idaho:	UNIVERSITY OF IDAHO, Moscow
Illinois:	ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago
	UNIVERSITY OF ILLINOIS, Urbana
Indiana:	PURDUE UNIVERSITY, Lafayette
	ROSE POLYTECHNIC INSTITUTE, Terre Haute
Iowa:	IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames
	UNIVERSITY OF IOWA, Iowa City
Kansas:	KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan
	UNIVERSITY OF KANSAS, Lawrence
Kentucky:	UNIVERSITY OF KENTUCKY, Lexington
Louisiana:	LOUISIANA STATE UNIVERSITY, University
Maine:	UNIVERSITY OF MAINE, Orono
Maryland:	JOHNS' HOPKINS UNIVERSITY, Baltimore
	UNIVERSITY OF MARYLAND, College Park
Massachusetts:	HARVARD UNIVERSITY, Cambridge
	MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge
	NORTHEASTERN UNIVERSITY, Boston
Michigan:	MICHIGAN COLLEGE OF MINING AND TECHNOLOGY, Houghton
	MICHIGAN STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, East Lansing
	UNIVERSITY OF DETROIT, Detroit
	UNIVERSITY OF MICHIGAN, Ann Arbor
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
Mississippi:	MISSISSIPPI STATE COLLEGE, State College
Missouri:	UNIVERSITY OF MISSOURI, Columbia
	WASHINGTON UNIVERSITY, St. Louis
	MISSOURI SCHOOL OF MINES & METALLURGY, Rolla
Montana:	MONTANA STATE COLLEGE, Bozeman
Nebraska:	UNIVERSITY OF NEBRASKA, Lincoln
Nevada:	UNIVERSITY OF NEVADA, Reno
New Hampshire:	UNIVERSITY OF NEW HAMPSHRIRE, Durham
New Jersey:	NEWARK COLLEGE OF ENGINEERING, Newark
	PRINCETON UNIVERSITY, Princeton
	RUTGERS UNIVERSITY, New Brunswick

To the War Department for training Engineers - Continued J.C.P.R.-1

New Mexico:	NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS, State College
	NEW MEXICO SCHOOL OF MINES, Socorro
New York:	POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn
	CLARKSON COLLEGE OF TECHNOLOGY, Potsdam
	COLLEGE OF THE CITY OF NEW YORK, New York
	COOPER UNION OF TECHNOLOGY, New York
	CORNELL UNIVERSITY, Ithaca
	MANHATTAN COLLEGE, New York
	NEW YORK STATE COLLEGE OF CERAMICS (ALFRED UNIVERSITY), Alfred
	NEW YORK UNIVERSITY, New York
	PRATT INSTITUTE, Brooklyn
	SYRACUSE UNIVERSITY, Syracuse
North Carolina:	NORTH CAROLINA STATE COLLEGE OF AGRICULTURE & ENGINEERING, Raleigh
North Dakota:	NORTH DAKOTA AGRICULTURAL COLLEGE, Fargo
	UNIVERSITY OF NORTH DAKOTA, Grand Forks
Ohio:	OHIO STATE UNIVERSITY, Columbus
	UNIVERSITY OF AKRON, Akron
	UNIVERSITY OF CINCINNATI, Cincinnati
Oklahoma:	OKLAHOMA AGRICULTURE AND MECHANICAL COLLEGE, Stillwater
	UNIVERSITY OF OKLAHOMA, Norman
	UNIVERSITY OF TULSA, Tulsa
Oregon:	OREGON STATE COLLEGE, Corvallis
Pennsylvania:	CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh
	DREXEL INSTITUTE OF TECHNOLOGY, Philadelphia
	LAFAYETTE COLLEGE, Easton
	LEHIGH UNIVERSITY, Bethlehem
	PENNSYLVANIA STATE COLLEGE, State College
	UNIVERSITY OF PENNSYLVANIA, Philadelphia
	UNIVERSITY OF PITTSBURGH, Pittsburgh
	VILLANOVA COLLEGE, Villanova
Rhode Island:	RHODE ISLAND STATE COLLEGE, Kingston
South Carolina:	CLEMSON AGRICULTURAL COLLEGE, Clemson
	THE CITADEL, Charleston
South Dakota:	SOUTH DAKOTA COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Brookings
Tennessee:	UNIVERSITY OF TENNESSEE, Knoxville
	VANDERBILT UNIVERSITY, Nashville
Texas:	AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS, College Station
	TEXAS TECHNOLOGICAL COLLEGE, Lubbock
Utah:	UNIVERSITY OF UTAH, Salt Lake City
	UTAH STATE AGRICULTURAL COLLEGE, Logan
Vermont:	NORWICH UNIVERSITY, Northfield
	UNIVERSITY OF VERMONT, Burlington
Virginia:	VIRGINIA MILITARY INSTITUTE, Lexington
	VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg
Washington:	STATE COLLEGE OF WASHINGTON, Pullman
	UNIVERSITY OF WASHINGTON, Seattle
West Virginia:	WEST VIRGINIA UNIVERSITY, Morgantown
Wisconsin:	UNIVERSITY OF WISCONSIN, Madison
Wyoming:	UNIVERSITY OF WYOMING, Laramie

To the War Department for the training of Army Aviation Cadets

Alabama:	BIRMINGHAM SOUTHERN COLLEGE, Birmingham
	TUSKEGEE INSTITUTE, Tuskegee
	UNIVERSITY OF ALABAMA, Tuscaloosa
Arizona:	ARIZONA STATE TEACHERS COLLEGE, Tempe
Arkansas:	ARKANSAS STATE TEACHERS COLLEGE, Jonesboro
	HENDERSON STATE TEACHERS COLLEGE, Arkadelphia
	OUACHITA COLLEGE, Arkadelphia
	UNIVERSITY OF ARKANSAS, Fayetteville
California:	COMPTON JUNIOR COLLEGE, Compton
	LONG BEACH JUNIOR COLLEGE, Long Beach
	PASADENA JUNIOR COLLEGE, Pasadena
Colorado:	COLORADO STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ft. Collins
	UNIVERSITY OF DENVER, Denver
Connecticut:	YALE UNIVERSITY, New Haven
Florida:	UNIVERSITY OF FLORIDA, Gainesville
	UNIVERSITY OF TAMPA, Tampa
Georgia:	BERRY COLLEGE, Mt. Berry
Idaho:	COLLEGE OF IDAHO, Caldwell
Illinois:	AUGUSTANA COLLEGE, Rock Island
	ELMHURST COLLEGE, Elmhurst
	JAMES MILLIKIN UNIVERSITY, Decatur
	KNOX COLLEGE, Galesburg
	SHURTLEFF COLLEGE, Alton
	SOUTHERN ILLINOIS NORMAL UNIVERSITY, Carbondale
	WHEATON COLLEGE, Wheaton
Indiana:	BUTLER UNIVERSITY, Indianapolis
	INDIANA CENTRAL COLLEGE, Indianapolis
	INDIANA UNIVERSITY, Bloomington
Iowa:	COE COLLEGE, Cedar Rapids
	IOWA STATE TEACHERS COLLEGE, Cedar Falls
	MORNINGSIDE COLLEGE, Sioux City
Kansas:	FORT HAYS KANSAS STATE COLLEGE, Hays
	KANSAS STATE TEACHERS COLLEGE, Emporia
	KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan
	MUNICIPAL UNIVERSITY OF WICHITA, Wichita
Kentucky:	CENTRE COLLEGE, Danville
Louisiana:	CENTENARY COLLEGE, Shreveport
	LOUISIANA STATE UNIVERSITY, Baton Rouge
Maine:	COLBY COLLEGE, Waterville
Maryland:	WESTERN MARYLAND COLLEGE, Westminster
Massachusetts:	AMERICAN INTERNATIONAL COLLEGE, Springfield
	MASSACHUSETTS STATE COLLEGE, Amherst
Michigan:	ALBION COLLEGE, Albion
	FORDSON JUNIOR COLLEGE, Dearborn
	MICHIGAN COLLEGE OF MINING AND TECHNOLOGY, Houghton
	MICHIGAN STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, East Lansing
	MICHIGAN STATE NORMAL COLLEGE, Ypsilanti
Minnesota:	CONCORDIA COLLEGE, Moorhead
	ST. JOHN'S UNIVERSITY, Collegeville
	UNIVERSITY OF MINNESOTA, Minneapolis
Mississippi:	MISSISSIPPI STATE COLLEGE, State College

To the War Department for the training of Army Aviation Cadets- Continued

Missouri:	JEFFERSON COLLEGE, St. Louis
	NORTHEAST MISSOURI STATE TEACHERS COLLEGE, Kirksville
	ROCKHURST COLLEGE, Kansas City
	ST. LOUIS UNIVERSITY, St. Louis
	SOUTHWEST MISSOURI STATE TEACHERS COLLEGE, Springfield
	UNIVERSITY OF MISSOURI, Columbia
Montana:	BILLINGS POLYTECHNIC INSTITUTE, Polytechnic
	MONTANA STATE COLLEGE, Bozeman
	MONTANA STATE UNIVERSITY, Missoula
	NORTHERN MONTANA COLLEGE, Havre
Nebraska:	CREIGHTON UNIVERSITY, Omaha
	HASTINGS COLLEGE, Hastings
	NEBRASKA STATE TEACHERS COLLEGE, Wayne
	UNIVERSITY OF OMAHA, Omaha
Nevada:	UNIVERSITY OF NEVADA, Reno
New Hampshire:	ST. ANSELM'S COLLEGE, Manchester
New York:	CANISIUS COLLEGE, Buffalo
	HAMILTON COLLEGE, Clinton
	NEW YORK STATE COLLEGE FOR TEACHERS, Albany
	SYRACUSE UNIVERSITY, Syracuse
	UNIVERSITY OF BUFFALO, Buffalo
North Carolina:	DAVIDSON COLLEGE, Davidson
	PRESBYTERIAN JUNIOR COLLEGE FOR MEN, Maxton
	NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh
North Dakota:	JAMESTOWN COLLEGE, Jamestown
	UNIVERSITY OF NORTH DAKOTA, Grand Forks
Ohio:	FENN COLLEGE, Cleveland
	HIRAM COLLEGE, Hiram
	KENT STATE UNIVERSITY, Kent
	MARIETTA COLLEGE, Marietta
	MT. UNION COLLEGE, Alliance
	MUNICIPAL UNIVERSITY, Toledo
	UNIVERSITY OF AKRON, Akron
	UNIVERSITY OF CINCINNATI, Cincinnati
	WESTERN RESERVE UNIVERSITY, Cleveland
	WITTENBERG COLLEGE, Springfield
	XAVIER UNIVERSITY, Cincinnati
Oklahoma:	CAMERON STATE AGRICULTURAL COLLEGE, Lawton
	NORTHERN OKLAHOMA JUNIOR COLLEGE, Tonkawa
	NORTHWESTERN STATE COLLEGE, Alva
	OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE, Stillwater
	OKLAHOMA BAPTISE UNIVERSITY, Shawnee
	OKLAHOMA CITY UNIVERSITY, Oklahoma City
	UNIVERSITY OF TULSA, Tulsa
Pennsylvania:	ALBRIGHT COLLEGE, Reading
	ALLEGHENY COLLEGE, Meadville
	DICKINSON COLLEGE, Carlisle
	GENEVA COLLEGE, Beaver Falls
	GETTYSBURG COLLEGE, Gettysburg
	GROVE CITY COLLEGE, Grove City
	LAFAYETTE COLLEGE, Easton
	ST. VINCENT COLLEGE, Latrobe
	UNIVERSITY OF PITTSBURGH, Pittsburgh
	WASHINGTON & JEFFERSON COLLEGE, Washington

To the War Department for the training of Army Aviation Cadets - Continued

South Carolina:	CLEMSON AGRICULTURAL COLLEGE, Clemson
	ERSKINE COLLEGE, Due West
	FURMAN UNIVERSITY, Greenville
	PRESBYTERIAN COLLEGE, Clinton
	WINTHROP COLLEGE, Rock Hill
	WOFFORD COLLEGE, Spartanburg
South Dakota:	BLACK HILLS TEACHERS COLLEGE, Spearfish
	HURON COLLEGE, Huron
	SOUTH DAKOTA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Brookings
Tennessee:	CUMBERLAND UNIVERSITY, Lebanon
	LINCLON MEMORIAL UNIVERSITY, Harrogate
	MARYVILLE COLLEGE, Maryville
	MEMPHIS STATE COLLEGE, Memphis
	STATE TEACHERS COLLEGE, Johnson City
	STATE TEACHERS COLLEGE, Murfreesboro
	TENNESSEE COLLEGE FOR WOMEN, Murfreesboro
	TENNESSEE POLYTECHNIC INSTITUTE, Cookeville
	UNION UNIVERSITY, Jackson
	UNIVERSITY OF CHATTANOOGA, Chattanooga
	UNIVERSITY OF TENNESSEE, Knoxville
	VANDERBILT UNIVERSITY, Nashville
Texas:	AUSTIN COLLEGE, Sherman
	COLLEGE OF MARSHALL, Marshall
	JOHN TARLETON AGRICULTURAL COLLEGE, Stephenville
	SOUTHWEST TEXAS STATE TEACHERS COLLEGE, San Marcos
	TEXAS AGRICULTURAL AND MECHANICAL COLLEGE, College Station
	COLLEGE OF MINES AND METALLURGY, El Paso
	TEXAS TECHNOLOGICAL COLLEGE, Lubbock
	TEXAS WESLEYAN COLLEGE, Fort Worth
Utah:	UTAH STATE AGRICULTURAL COLLEGE, Logan
Vermont:	NORWICH UNIVERSTIY, Northfield
	UNIVERSITY OF VERMONT, Burlington
Virginia:	LYNCHBURG COLLEGE, Lynchburg
Washginton:	CENTRAL WASHINGTON COLLEGE, Ellensburg
	ST. MARTIN'S COLLEGE, Lacey
	STATE COLLEGE OF WASHINGTON, Pullman
West Virginia:	CONCORD STATE TEACHERS COLLEGE, Athens
	MARSHALL COLLEGE, Huntington
	WEST VIRGINIA UNIVERSITY, Morgantown
Wisconsin:	BELOIT COLLEGE, Beloit
	CARROLL COLLEGE, Waukesha
	CENTRAL STATE TEACHERS COLLEGE, Stevens Point
	STATE TEACHERS COLLEGE, Eauclaire
	STATE TEACHERS COLLEGE, Oshkosh
	UNIVERSITY OF WISCONSIN (Branches at Milwaukee & Racine)

To the War Department for training centers for W.A.A.C. trainees

Arkansas:	ARKANSAS POLYTECHNIC COLLEGE, Russellville
	ARKANSAS STATE TEACHERS COLLEGE, Conway
California:	FRESNO STATE COLLEGE, Fresno
	WHITTIER COLLEGE, Whittier
Colorado:	UNIVERSITY OF DENVER, Denver
New Mexico:	EASTERN NEW MEXICO COLLEGE, Portales
	LORETTA ACADEMY, Las Cruces

To the War Department for training centers for W.A.A.C. trainees - Continued

	LORETTA ACADEMY, Santa Fe
	NEW MEXCIO HIGHLANDS UNIVERSITY, Las Vegas
	NEW MEXCIO STATE TEACHERS COLLEGE, Silver City
	ST. MICHAELS ACADEMY, Santa Fe
	SANDIA SCHOOL, Albuquerque
	SPANISH-AMERICAN NORMAL, El Rico
North Carolina:	ELON COLLEGE, Elon
Oklahoma:	BETHANY-PENIEL COLLEGE, Bethany
	EAST CENTRAL STATE COLLEGE, Ada
	NORTHEASTERN STATE COLLEGE, Tahlequah
	NORTHWESTERN STATE COLLEGE, Alva
	OKLAHOMA CITY UNIVERSITY, Oklahoma City
	OKLAHOMA COLLEGE FOR WOMEN, Chickshe
	PHILLIPS UNIVERSITY, Enid
Oregon:	OREGON COLLEGE OF EDUCATION, Monmouth
Tennessee:	GEORGE PEABODY COLLEGE FOR TEACHERS, Nashville
Texas:	EAST TEXAS STATE TEACHERS COLLEGE, Commerce
	TEXAS STATE COLLEGE FOR WOMEN, Denton
	STEPHEN F. AUSTIN STATE TEACHERS COLLEGE, Nacogdoches
	SUL-ROSS STATE TEACHERS COLLEGE, Alphine
	WEST TEXAS STATE TEACHERS COLLEGE, Canyon

To the War Department for Basic Training in the Army Specialized Program
(All these now have Arty R.O.T.C. units)

Alabama:	TUSKEGEE INSTITUTE, Tuskegee, Institute
Dist. of Co.	HOWARD UNIVERSITY, Washington
North Carolina:	NEGRO AGRICULTURAL AND TECHNICAL COLLEGE, Greensboro
Ohio:	WILBERFORCE UNIVERSITY, Wilberforce
Texas:	PRAIRIE VIEW STATE COLLEGE, Prairie View
Virginia:	HAMPTON INSTITUTE, Hampton
West Virginia:	WEST VIRGINIA STATE COLLEGE, Institute

To the War Department for pre-retecorological training for the Army Air Corps

Missouri: WASHINGTON UNIVERSITY, St. Louis

To the War Department for training officers for the Quartmaster's Corps

Massachusetts: HARVARD UNIVERSITY, Cambridge

To the War Department for training in Navigation

Massachusetts: HARVARD UNIVERSITY, Cambridge

To the War Department for training students in Japanese Language

Michigan: UNIVERSITY OF MICHIGAN, Ann Arbor

To the War Department for training in advanced technical subjects

Ohio: UNIVERISTY OF DAYTON, Dayton

To the War Department for training Auto Mechanics

Virginia: HAMPTON INSTITUTE, Hampton

To the Navy Department for training Engineers

California:	CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena
	UNIVERSITY OF CALIFORNIA, San Francisco
	UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles
Colorado:	UNIVERSITY OF COLORADO, Boulder
Connecticut:	YALE UNIVERSITY, New Haven
Georgia:	GEORGIA SCHOOL OF TECHNOLOGY, Atlanta
Illinois:	ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago
	NORTHWESTERN UNIVERSITY, Evanston
	UNIVERSITY OF ILLINOIS, Urbana
Indiana:	PURDUE UNIVERSITY, Lafayette
Iowa:	IOWA STATE AGRICULTURAL AND MECHANICAL COLLEGE, Ames
Kansas:	UNIVERSITY OF KANSAS, Lawrence
Kentucky:	UNIVERSITY OF LOUISVILLE, Louisville
Louisiana	TULANE UNIVERSITY OF LOUISIANA, New Orleans
Massachusetts:	MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge
	TUFTS COLLEGE, Medford
	WORCESTER POLYTECHNIC INSTUTE, Worcester
Michigan:	UNIVERSITY OF MICHIGAN, Ann Arbor
Minnesota:	UNIVERSITY OF MINNESOTA, Minneapolis
Missouri:	UNIVERSITY OF MISSOURI, Columbia
Montana:	MONTANA SCHOOL OF MINES, Butte
New Hampshire:	DARTMOUTH COLLEGE, Hanover
New Jersey:	STEVENS INSTITUTE OF TECHNOLOGY, Hoboken
New Mexico:	UNIVERSITY OF NEW MEXICO, Albuquerque
New York:	COLUMBIA UNIVERSITY, New York
	CORNELL UNIVERSITY, Ithaca
	RENSSELAER POLYTECHNIC INSTITUTE, Troy
	UNION COLLEGE, Schenectady
	UNIVERSITY OF ROCHESTER, Rochester
	WEBB INSTITUTE OF NAVAL ARCHITECTURE, New York
North Carolina:	DUKE UNIVERSITY, Durham
Ohio:	CASE SCHOOL OF APPLIED SCIENCE, Cleveland
Oklahoma:	UNIVERSITY OF OKLAHOMA, Norman
Pennsylvania:	BUCKNELL UNIVERSITY, Lewisburg
	CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh
	PENNSYLVANIA STATE COLLEGE, State College
	SWARTHMORE COLLEGE, Swarthmore
	UNIVERSITY OF PENNSYLVANIA, Philadelphia
Rhode Island:	BROWN UNIVERSITY, Providence
South Carolina:	UNIVERSITY OF SOUTH CAROLINA, Columbia
South Dakota:	SOUTH DAKOTA STATE SCHOOL OF MINES, Rapid City
Texas:	RICE INSTITUTE, Houston
	SOUTHERN METHODIST UNIVERSITY, Dallas
	UNIVERSITY OF TEXAS, Austin
Virginia:	UNIVERSITY OF VIRGINIA, Charlottesville
Washington:	UNIVERSITY OF WASHINGTON, Seattle
Wisconsin:	MARQUETTE UNIVERSITY, Milwaukee
	UNIVERSITY OF WISCONSIN, Madison

To the Navy Department for training Women Reserves (WAVES)

New York:	HUNTER COLLEGE OF THE CITY OF NEW YORK, (Bronx Campus) New York

To the Navy Department for training Chaplains

Virginia:	COLLEGE OF WILLIAM AND MARY, Williamsburg

To the Navy Department for a School of Reconnition

Ohio:	OHIO STATE UNIVERSITY, Columbus

Dr. E. C. Elliot, chief of professional and technical training, Bureau of Training, War Manpower Commission, is chairman of the Joint Committee.

OHR-WMC-2037 1/30/43

ADVANCE RELEASE

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

PM-4297

For ADVANCE RELEASE, Tuesday a.m. papers, February 2, 1943

About four and a half million workers were trained for war production in 1942 by agencies operating under the Bureau of Training, War Manpower Commission, it was announced today by Paul V. McNutt, Commission Chairman.

The agencies participating in the Commission's training program, together with the estimated number of persons trained by each agency, follows:

The Training Within Industry Service.....	365,000
The Apprentice-Training Service.....	177,000
National Youth Administration.....	597,000
Vocational Training for War Production Workers (Vocational Schools).....	2,445,000
Training for Rural War Production Workers (Vocational Schools)	269,000
Engineering-Science-Management-War Training (Colleges and Universities)	550,000

The primary purpose of all the training programs is to prepare workers for jobs in war production and to aid workers already in war industries to advance to more responsible positions. The training given covers a wide range of occupations and industries.

The Training Within Industry and Apprentice-Training Service cooperates with war plants in the solution of their training problems. Training Within Industry Service provides courses for foremen and supervisors in Job Instructor, Job Methods and Job Relations Training as well as Training for Training Directors. In 1942 the Apprentice Training Service aided war plants in the training of 127,000 apprentices. It also aided war industries to provide courses which resulted in the advancement of 50,000 workers to more important jobs.

The National Youth Administration gave training in specific skills required in war industries to unemployed youth between the ages of 16 and 24.

The public vocational schools cooperating with the Office of Education in the Vocational Training for War Production Workers Program gave training designed to prepare workers for jobs in war plants. Through this program, 1,356,000 persons were given preemployment training before they entered war plants. Another 1,089,000 were furnished supplementary vocational training courses while they were on war industry pay rolls.

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The vocational schools also cooperated in the Vocational Training for Rural War Production Workers Program by furnishing training to farmers and nonfarmers in the production of farm commodities and the repair, operation and construction of farm machinery and equipment.

The Engineering, Science and Management War Training Program provided short courses of college grade in engineering, chemistry, physics and production supervision and management. The purpose of this program was to train professional and technical workers for war industries. The men enrolled in these courses included both foremen and supervisors in war plants and students of college grade anxious to get into war production.

ADVANCE RELEASE

ADVANCE RELEASE: For THURSDAY AFTERNOON Papers, January 14, 1943.
SIMI-WMC-3447

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION PM-4279

Pointing out that war industries can make much wider use of facilities of the Apprentice and Training Service in efforts to solve manpower shortages, Chairman Paul V. McNutt, of the War Manpower Commission, announced today that, since February 1942, the agency has assisted an average of 1,100 establishments monthly to organize on-the-job short-term training and apprenticeship programs.

"As the result of the work of this agency, thousands of production workers and skilled craftsmen have been made available to our war plants during the past ten months," Mr. McNutt said, "Many thousands more can be added to our industries if employers, badly in need of trained workers, more fully utilize the agency and its field representatives.

"Apprentice and Training Service," the Chairman said, "is one of the WMC agencies charged with assisting industry to train workers under production conditions. Another agency in this field is Training Within Industry Service, while the National Youth Administration also provides a combination of training and practical production experience. Pre-employment and supplemental training courses are provided by vocational schools and colleges under auspices of the Office of Education.

"Primary concern of Apprentice and Training Service is organizing programs to train and upgrade workers at production level--specialists, machine operators, single-skilled men, etc.--and to develop all-around skilled mechanics through apprenticeship, while TWI concentrates on training foremen and other supervisory personnel and training instructors."

Mr. McNutt's remarks were based on a year-end report by William F. Patterson, Director of the Apprentice and Training Service, summarizing the accomplishments of the agency in short-term training and apprenticeship up to December 15.

The report shows that in December, 29,291 firms had short-term "advancing worker" and apprenticeship programs in operation formulated with the help of the Service. A compilation made last February showed that at that time there were 18,500 companies training under ATS programs, indicating an increase of nearly 11,000 in less than ten full months.

Under "advancing worker" are grouped all training programs, other than apprenticeship, designed to train or retrain workers already at work in war production plants.

Though it is not indicated in the report what proportion of the program organized between February and December, involved "advancing worker" training, the Services's interest in short-term training dates from August 1941, when minimum standards covering all types of short-term in-plant training were developed and approved by the Federal Committee on Apprenticeship.

(over)

The report reveals that during the sixteen months since September 1941, when the Service began to put short-term training schedules in operation, a total of 2,[illegible] "advancing worker" programs have been completed, an average of 40 each month. Of this number, 198 have been set up in conjunction with apprenticeship programs, thus assuring the plants full coverage of labor needs in all categories of skill.

Out of the total number of approved apprenticeship programs established to date, 938 are craft programs, designed to cover the training of apprentices in one particular trade. The report indicates that 24,150 companies are now training apprentices under these programs.

In addition there are 5,641 private plant apprenticeship programs established to meet the specific skilled labor needs of war industries. Plant programs frequently cover two or more trades.

Approximately 7,294,000 workers are employed by the 89,891 companies serviced by the Apprentice and Training Service. Included in this number are 127,430 apprentices.

It has been repeatedly pointed out by the War Manpower Commission that there are no more unemployed skilled workers and that, to utilize fully the manpower on hand, plants must make arrangements for continuous in-plant training.

By these arrangements not only can the skills of green workers be developed more quickly but the skills of workers now on the job can be further developed through upgrading and short-term training, and apprenticeship.

Field representatives of the Apprentice and Training Service are located in or near key industrial areas, and can be reached through the nearest War Manpower Commission field office.

THE UNIVERSITY OF CHICAGO
SCHOOL OF BUSINESS

Sixth Program of

Production Training for War Industries

For Men and Women—Twelve Weeks Starting March 8, 1943

EVENINGS—18 SOUTH MICHIGAN AVENUE

Sponsored by the Engineering, Science, and Management War Training Program, United States Office of Education

TUITION FREE

Building upon experience in five previous highly successful supervisory training courses, the purpose of this program is to train men and women for work in war industries, and to place them in positions leading to supervisory responsibilities. Special emphasis is given to retraining of persons shifting from nonessential to war industries and to preparing women for war work.

The principal criterion for acceptance into the course is employability. Men and women with minimum educational qualifications (high-school graduation), whose previous experience indicates a likelihood of benefiting from the instruction, are eligible. Men should be draft exempt by virtue of age, family obligations, or physical disability.

Graduates of the program are assured of vigorous placement assistance. While no individual can be guaranteed a job, all the facilities of the School of Business are at the disposal of the trainees and a special system of contacts with employers in the Chicago area is maintained. Past experience indicates that good jobs are available for everyone who can meet a reasonable test of employability.

This program starts Monday evening, March 8, 1943, and runs twelve weeks. All classes meet at 18 South Michigan Avenue, on the eighth floor. Regular attendance is required.

For an application form, or for further information, write The School of Business, The University of Chicago.

PRODUCTION TRAINING FOR WAR

The rapid expansion of war industries continues to produce numerous shortages of personnel, among the most serious of which is the scarcity of trained supervisors. Continuing decline in nonessential industries is releasing for service many competent men and women who have demonstrated capacities for leadership. A program of training to help people in declining industries to shift from their former routines to supervisory positions in factories and offices is a logical step in meeting the present manpower needs.

Recruits from other sources of supervisory personnel can render able service in the manufacture of war materials after a short preliminary period of orientation. Some of these are: women with good educational backgrounds and some business experience; men with production experience but currently in other occupations; men or women already in war industries to be upgraded upon receipt of training; and recent graduates of colleges and junior colleges with arts and science backgrounds. Each of these groups has contributed an important quota to the previous five classes in production supervision at the School of Business of the University of Chicago.

In recognition of the urgent need, the School of Business offers its sixth intensive program in production supervision to a group of carefully selected applicants. This program provides 240 class hours of instruction covering the minimum essentials of training for industrial supervision. Students who complete the program will be available for immediate employment in positions eventually leading to supervisory or semi-supervisory responsibilities in war industries. In special cases (for example, those in war industries or those who previously have completed work in one or more of the fields covered) registrations may be accepted for less than a full program, but preference in enrollment and in placement will be given to those who register for the complete program. The training has been indorsed by the government through the War Manpower Commission and the United States Office of Education.

OBJECTIVES OF THE PROGRAM

The plan provides basic training for those who possess the qualifications for exceptional service and are in a position to profit from an intensive course in management. Special attention will be given to the needs of war-production areas, with the Chicago metropolitan region primarily in mind.

The immediate objective is to train qualified individuals so that they may render useful services in such positions as foremen, assistant foremen, time and cost clerks, pay-roll clerks, personnel supervisors, job- and motion-study analysts, inspection supervisors, office supervisors, and accounting and purchasing assistants. The program is broad and its subject matter fundamental, designed to give a basic orientation for managerial positions of all types in war industries.

PROGRAM OF STUDY

WORK begins March 8, 1943, and continues for twelve weeks of intensive evening training. Lectures and discussion sessions run from 6:15 P.M. to 9:45 P.M. daily, Monday through Friday. Regular attendance is required and each student is expected to do outside reading and problem solution. Instruction covers the following subject matter:

Production Control

(Alternative for Problems of Office Organization and Supervision)

This is an introduction to the general subject matter of factory management, with emphasis upon the systematic procedures associated with volume output. The presentation combines a study of principles with the analysis of typical problems in such areas as factory layout, machine selection, quality control, stores management, planning, standardization, time and motion study, and wage incentives.

(Mondays and Thursdays, 8:15–9:45 P.M.)

Problems of Office Organization and Supervision

(Alternative for Production Control)

An intensive study of the duties and responsibilities of the office supervisor, with special emphasis upon practical operating methods for meeting the present emergency with shortages in equipment, machines, and personnel. The various aspects of office management and supervision studied are: methods and routines, layout and physical factors, equipment and materials, manuals and procedures, and performance standards in terms of work units and in terms of personnel.

(Mondays and Thursdays, 8:15–9:45 P.M.)

Priorities and Procurement

The purpose of this section is to give an understanding of the economic factors that necessitate priorities and price control during the war period. An effort is made to outline the major developments in priorities control and to give the students some knowledge of the technical terms such as M orders, L orders, PRP, CMP, etc. In addition, some time is spent on the general organization of the W.P.B. and the O.P.A. in the administration of this work. Several lectures are devoted to procurement procedures.

(Tuesdays and Fridays, 6:15–7:45 P.M.)

Accounting, Budgetary Procedure, and Cost Accounting

Emphasis is upon the managerial-control functions of accounting. The introduction to basic terminology and the double-entry method is followed by a study of simple and specialized journals, control and subsidiary ledger accounts, periodic adjustments, and the preparation of general financial statements. Disbursement-voucher procedure and factory accounting are illustrated.

Budgetary procedures are outlined in relation to departmental cost records, followed by detailed application of principles to pay-roll, materials, and other operating cost transactions. Accounting for product costs on the "specific-order" or "process" basis, involving both direct allocation and the tracing of costs by means of "normal" departmental cost rates is explained. The course concludes with a demonstration of standard-cost procedures.

(Tuesdays and Fridays, 8:15–9:45 P.M.)

Industrial Relations

The primary objectives here are: (*a*) to acquaint students with current procedures available for effective employment selection and placement, job training, supervision, and employee motivation; (*b*) to give some appreciation of the 'human point of view" in industry; (*c*) to provide enough understanding of principles and of "scientific method" in this field to enable students to exercise some critical judgment in evaluating and improving procedures; and (*d*) to introduce students to the literature and other sources of information.

(Mondays and Thursdays, 1st six weeks, 6:15–7:45 P.M.)

Job Analysis, Manning Tables, and Wage Administration

To provide more effective allocation of manpower between the war industries and the military forces the government is now requiring from all employers a detailed inventory of jobs and personnel. In the interest of wage stabilization and control of inflation, the War Labor Board is now administering requests for wage adjustments. Operations under both of these types of controls require of management detailed analysis and classification of jobs and development of comprehensive job- and wage-administration programs.

(Mondays and Thursdays, 2d six weeks, 6:15–7:45 P.M.)

Discussion Groups (Wednesdays)

Production Control, 8:15–9:45 P.M.
Accounting (Women), 6:15–7:45 P.M.
Office Supervision, 8:15–9:45 P.M.
Accounting (Men), 6:15–7:45 P.M.

GENERAL INFORMATION

Tuition and fees.—The program is tuition free to applicants selected by the School. The cost is borne by the United States Office of Education through the Engineering, Science, and Management War Training program. A complete working library is available free of charge to students.

Credit.—The purpose of the program is to contribute to war preparation. It is not a part of the regular curriculum of the School leading to fulfilment of degree requirements and no college credit will be granted. A certificate is issued to those who successfully complete the entire program.

Instructional staff.—The program will be under the direction of Professor Willard J. Graham, as Educational Supervisor. The following staff members will have responsibility for the indicated instructional fields:

Ann Brewington, Associate Professor of Business Education (Problems of Office Organization and Supervision)

George H. Brown, Associate Professor of Marketing (Priorities and Procurement)

Willard J. Graham, Associate Professor of Accounting (Accounting, Budgetary Procedure, and Cost Accounting)

Arthur W. Kornhauser, Associate Professor of Business Psychology (Industrial Relations)

William Norman Mitchell, Professor of Production Control (Production Control)

Raleigh W. Stone, Associate Professor of Industrial Relations (Job Analysis, Manning Tables, and Wage Administration)

PLACEMENT

A major objective of the program is the placement of graduates in war industries. The full placement facilities of the School of Business are made available to those receiving certificates and a cooperative arrangement with the University's Bureau of Vocational Guidance and Placement furnishes the trainees with pertinent job requests from that source. A system of contacts is maintained with employers in the Chicago area, notifying them of the qualifications of class members and keeping them informed of graduation dates. Although no student is guaranteed a position, in the past these efforts have resulted in 80 to 90 per cent placement of all students shortly after they received certificates.

* * *

APPLICATIONS AND INFORMATION

To obtain application blanks, or to secure further information, write:

The School of Business
The University of Chicago

MVR
your copy

JOB RELATIONS TRAINING

A TRAINING WITHIN INDUSTRY PROGRAM

Training Within Industry Service

Bureau of Training

War Manpower Commission

6-6564-bu-fo-

What It Is

A practical way to help supervisors to develop skill in getting results through the people they supervise, not only as individuals but as a team.

The Training Within Industry Bulletin "How to Improve Job Relations" describes the method.

Where Did It Originate

This material was drawn from the work experience of successful supervisors who have practiced the principles of good Job Relations and are recognized for their ability as leaders.

This program was developed and organized by the Training Within Industry Service of the War Manpower Commission.

How it operates

The training is given to groups of plant supervisors in 5 two-hour sessions, at any periods convenient to the companies and those who attend. It can be given at any time, day or night, on any days, Sundays included.

How many in groups

Best results are obtained with groups of 10. With groups composed of more than 10, there is not sufficient time for actual individual practice. This program is NOT a discussion of theory but a plan where participants spend most of their time working on their own job relations problems.

Who will conduct the sessions

The 5 two-hour sessions will, in most cases, be led by selected leaders already in the employ of each company or plant. Such leaders are designated as "Job Relations Trainers." All Job Relations Trainers will be specially prepared and coached by the Training Within Industry Service.

Where it is not feasible or practicable for the company to provide its own Job Relations Trainers, qualified Trainers from other industries will be provided by Training Within Industry.

What does it cost

The six-day Institute in which Job Relations Trainers are prepared will be conducted by a Training within Industry representative WITHOUT COST to the company. If Trainers for the 5 two-hour sessions are provided from other industries by the Training within Industry Service they will receive hourly compensation from Federal funds.

How to get started

The District Representative of the Training Within Industry Service, War Manpower Commission, or one of the District Training Consultants, will arrange to make Job Relations Training available to all war contractors who request the program.

Each company will be asked to designate one contact person, with whom all schedules and details may be arranged.

EVERY SUPERVISOR HAS FIVE NEEDS:

1. Knowledge of the Work - materials, machines, tools, processes, operations, products, technical skill, and information.

2. Knowledge of Responsibilities - policies, agreements, rules, regulations, safety, schedules, interdepartmental relationships.

It is necessary for every supervisor to know his job technically and then to have a clear understanding of his local plant authority and responsibilities. Such knowledge must be supplied locally by each plant or company because both of these kinds of knowledge are constantly changing.

3. Skill in Leading - increasing production by helping supervisors to improve their understanding of individuals, their ability to size up situations, their ways of working with people.

4. Skill in Planning - improving job methods by having supervisors study each operation in order to combine, rearrange, and simplify details affecting the use of materials, machines, tools, manpower.

5. Skill in Instructing - shortening training time by breaking down jobs into simple operations, making the learner receptive, presenting the instruction, trying out his performance, following up for results.

These basic skills must be acquired individually. Practice and experience in using them enable both new and experienced supervisors to recognize and solve daily problems promptly.

Training Within Industry Service offers short intensive training programs to war production supervisors to give them a start in developing:

skill in leading through its Job Relations Training program
skill in planning through its Job Methods Training program
skill in instructing through its Job Instruction Training Program

Confidence and resourcefulness in how to proceed, not standardized solutions and rules, are developed; these enable supervisors to get good teamwork, to give better service, and to get out more production. In no other way can production be so quickly influenced and manpower conserved.

WAR MANPOWER COMMISSION

Bureau of Training

TRAINING WITHIN INDUSTRY SERVICE

District Offices

For information or advisory assistance concerning the training of supervisors while on the job, apply to the Training Within Industry district office nearest you.

Atlanta, Ga., Room 603 Grand Theatre Bldg. (Hemlock 6890)

Baltimore, Md., Room 3106, Baltimore Trust Bldg. (Plaza 8170)

Boston, Mass., Room 1035, Park Square Bldg. (Hubbard 0380)

Chicago, Ill., Room 1265, Adams-Franklin Bldg., 222 West Adams St. (Andover 3600)

Cincinnati, Ohio, Room 705, Union Trust Bldg. (Parkway 0100)

Cleveland, Ohio, Room 513 Union Commerce Bldg., Euclid Avenue and East 9th St., (Cherry 7900)

Denver, Colo., Room 551 Equitable Building. (Tabor 3173)

Detroit, Mich., Room 15 Boulevard Bldg., 7310 Woodward Ave. (Trinity 1-5500)

Houston, Tex., North Mezzanine Floor Gulf Bldg. (Capital 7201)

Indianapolis, Ind., Room 915, Circle Tower Bldg. (Market 8511)

Los Angeles, Calif., 755 Western Pacific Bldg., 1031 So. Broadway (Prospect 4971)

Minneapolis, Minn., 516 Midland Bank Bldg. (Maine 3244)

Newark, N. J., Room 601, 605 Broad St. (Mitchell 2-1114)

New Haven, Conn., Room 515, 152 Temple St. (6-5186)

New York, N. Y., Room 2026, 11 West Forty-second St. (Murray Hill 3-6805)

Philadelphia, Pa., Room 1740, 12 South Twelfth St. (Locust 3400)

Pittsburgh, Pa., Room 360, Administration Bldg., Carnegie Institute of Technology (Schenly 2925)

Portland, Oreg., Room 1006, Bedell Bldg. (Broadway 8471)

Raleigh, N. C., Room 1112, Raleigh Bldg. Fayetteville and Hargett Sts., (2-3306)

St. Louis, Mo., Room 603, Shell Bldg. (Central 4206)

San Francisco, Calif., Room 702 Newhall Bldg., 260 California St. (Exbrook 0369)

Seattle, Wash., Room 5516 White Bldg. (Eliot 0200)

HEADQUARTERS OFFICE

1778 Pennsylvania Ave., N. W.
Washington, D. C. (Executive-4660)

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TRAINING WITHIN INDUSTRY SERVICE
BUREAU OF TRAINING
WAR MANPOWER COMMISSION

Bulletin No. 4-D

Washington, D. C. January, 1943

HOW TO IMPROVE JOB RELATIONS

In these times, for maximum production, machines and materials are not enough. We need the individual skills and the maximum cooperation of every man and woman who is at work turning out what our armed forces and civilian workers have to have.

You know how important it is not to have any lost production because of misunderstandings on the job, or because people do not realize the vital part they have in the war effort, or because someone is slowed down on his job by things that happened off the job.

Experienced supervisors who have demonstrated their ability to "work well with people" have developed a special skill. You can acquire this skill. By making use of it, you can be more sure of meeting your production requirements.

This is the time; and the place is right where you are!

C. R. Dooley, Director
Training Within Industry Service

EVERYDAY PROBLEMS

Does anyone in your department ever refuse to do some particular job? Or, maybe, even quit his job? Do you have any people who are discouraged or who make other people dissatisfied?

And are there any changes being made in your plant - in how you work, what you do - in the people you work with?

Does everyone come to work regularly, or are you ever held up by absenteeism? And do you ever find you are by-passed by people who go over your head to your own boss?

All job relations problems don't come up at once, but they do occur, and management does hold supervisors responsible for handling such problems.

The supervisor today needs a high degree of skill to handle his own problems. But as part of the skill, first of all, he needs a strong foundation for good relationships with the people whose work he directs.

THE FOUNDATION OF GOOD RELATIONS

You do not produce a ton of steel, build a single jeep - it is the people you supervise who turn out production. The supervisor needs to remember constantly that results come through people.

There are certain basic principles which are foundations in establishing and maintaining good relations between you and those whose work you direct. Always remember to:

Let each worker know how he is getting along.
Give credit when due.
Tell people in advance about changes that will affect them.
Make best use of each person's ability.

These principles apply to all workers, and they do not represent actions which are to be taken only once or at rare intervals. Constantly following them in day-to-day operation will pay dividends.

Let each worker know how he is getting along.

It is important to keep people posted on how they are measuring up against what is expected of them. The "everything is all right unless I tell you so" philosophy does not fit into modern supervision. The man who is doing all right should be told so. And it is often more important to check the person who is just beginning to skid. If you have to say "you've been slipping for quite a while," you know what the worker will feel - "why didn't you tell me sooner?"

Give credit when due.

The worker and the department deserve to know when their efforts have contributed to an accomplishment. Recognition of good work or faithful performance makes it easier to get extra effort again. You like to get proper credit yourself.

Tell people in advance about changes that will affect them.

It is not always possible for you to let a worker "in" on all decisions which affect him, but he can and should always be given the chance to "have his say." If you give the reasons for changes before they are made, you will avoid many misunderstandings.

Make best use of each person's ability.

Everyone likes to feel, particularly in war time, that he is working at his highest level of skill and ability. Take advantage of special interest in kinds of work, and give each person as much and as responsible work as he can handle.

TREATING PEOPLE AS INDIVIDUALS

While these foundations apply to all people, you cannot let it go at "treating them all alike." No one wants to be known simply as a time-card number or as "the new man" - neither you nor those you supervise. We are all different. What happens to one operator off the job makes him different from his partner on the same job. Each of us wants to be known for his own personal characteristics. There are things that you feel are important to you as an individual. You must remember other individuals feel the same way.

THE SKILL OF UNDERSTANDING PEOPLE

Applying these foundations of good worker-supervisor relations will not guarantee smooth operation for you, but will prevent many misunderstandings.

However, there are other things which you must consider. You need to know each individual employee and what is important to him. You need to know your people for everyday operation of your department, and you particularly need this information when you have a difficult situation to handle as a job relations problem.

HOW TO HANDLE A PROBLEM

Because changes do occur, and problems do arise, you need to have skill in handling the situations which are within your responsibility. Often you are on the spot and you feel you must do something immediately. Hasty action may mean that you have a more difficult situation to handle later. When a problem arises, consider these steps as the outline for action:

1. Get the facts - be sure you have the whole story.
2. Weigh and decide - don't jump to conclusions.
3. Take action - don't pass the buck.
4. Check results - did your action help production?

1. Get the facts.

Problems may come up because of something that happens at the moment, but you need to get the whole background. Some of it will be made up of facts about the employee - his age, length of service, and experience on this job.

You will need, of course, to take into consideration both the plant rules and just "the way things are done here."

Remember in getting the facts you may think you know the person quite well, but if you classify him as a "good fellow" or a "chronic kicker," you are not really looking at an individual person. You must regard him as a person who is different from his work partner and from every other person in the department in every single aspect whether by a very slight or a very great degree.

As a supervisor, you must know what that man thinks and feels about himself and the people around him. Find out what the man wants - is he able or willing to express it - and what does he think should be done? and why? The experienced supervisor knows that he must also consider such other factors as health and working conditions which may be affecting the man.

If more than one person is involved, you must go through the same fact-finding steps for each person. Before you can plan what to do, you must be sure you really have the whole story.

8-4221 P1 b1

2. Weigh and decide.

All these facts must be assembled and considered together. When all the factors are brought together, fitted in, and considered in the light of their relations to each other, many times the right answer almost "jumps out." The wise thing to do becomes clearer.

Certainly you, the man on the spot, are in the best place to know the right thing to do, for you have the most complete picture of the assembled facts. If you jump to conclusions, you make poor use of your strategic position. When you act without evaluating the whole situation you are likely to have more difficult problems to handle later.

3. Take action.

While jumping to conclusions is a poor way to handle supervisory problems, putting off action may be equally unfortunate. A supervisor cannot "pass the buck" or he, himself, will be by-passed.

However, it is not "passing the buck" to recognize after full consideration of the problem that there are some situations which you cannot handle yourself. You also make a decision and take action when you size up a situation as one on which you need help, or recognize one which is not within your own job to handle and see that it is passed on to the person who does have the responsibility and authority.

In any action, timing must be considered - the wrong "time" can make it the wrong thing to do.

4. Check results.

You must determine whether your action worked. If it did not, you must re-examine the whole situation and attempt to find what of importance you overlooked. Checking the results of action is necessary in every situation because conditions change, and what worked with one individual will not necessarily work with another.

"GOOD" SUPERVISION

One of the hardest parts of your job will be that of giving consideration to the importance of people in a problem situation and knowing what is important to each individual person. This is not simply a matter of determining what is right or wrong, or deciding what is just or unjust, but is a practical approach to effective supervision. It may be thought to take too much time but day-by-day use of this skill in dealing with people will save you time in the long run.

If you know your people well enough to build them into a smooth operating group you will be playing an important part in war production.

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JOB METHODS TRAINING

one of the services made available to all war production contractors and sub-contractors by ***TRAINING WITHIN INDUSTRY*** *of the* ***WAR MANPOWER COMMISSION***



This is a plan that puts into effect the procedure outlined by the Training Within Industry Bulletin 4-C entitled, "HOW TO IMPRO'E JOB METHODS."

It is specially prepared to help all supervisors, who must make the maximum use of materials, machines and manpower now available - foremen, lead men, job setters, and related staff men. It is useful to all who direct the work of others - from foremen to works manager.

JOB METHODS TRAINING HELPS SUPERVISORS

IMPROVE PRODUCTION METHODS.

Who originated it

The principles of Job Methods improvement set forth in the Plan have always been used in American industry.

The present condensed Plan was worked out by a group of the nation's leaders in industrial training, loaned by their companies to the War Manpower Commission for this purpose.

How it operates

The training is given to groups of plant supervisors in 5 two-hour sessions, at any periods convenient to the companies and those who attend. It can be given at any time, day or night, on any days, Sunday included. It is essential that those supervisors to whom it is planned to give Job Methods Training, have had Job Instructor Training.

How many in groups

Best results are obtained with groups of 12. With groups composed of more than 12, there is not sufficient time, for actual individual practice. This Plan is NOT a discussion of theory but a plan where participants spend most of their time ACTUALLY MAKING JOB IMPROVEMENTS.

Who will conduct the sessions

The 5 two-hour sessions will, in most cases, be led by specially selected leaders already in the employ of each company of plant. Such leaders are designated as "War Production Trainers."

Where it is not feasible or practicable for the company to provide its own War Production Trainers, qualified Trainers from other industries will be provided on a part-time basis.

Supervision of War Production Trainers, to assure a high standard of quality, will be provided by Training Within Industry.

What does it cost

All War Production Trainers will be specially prepared and coached to carry on the program. This preparation requires four days. The four-day session will be conducted by a representative of Training Within Industry WITHOUT COST to the company.

If Trainers are provided from other industries, they will receive a modest hourly compensation out of Federal funds administered by the State Vocational Board.

How to get started

All that is necessary to get started is to notify the District Representative, of Training Within Industry, War Manpower Commission, or one of the District Training Consultants.

Each company will be asked to designate one contact person, with whom all schedules and details may be arranged.

JOB METHODS TRAINING

helps supervisors make
the maximum use of the

MACHINES, MATERIALS AND MANPOWER

NOW AVAILABLE

WAR MANPOWER COMMISSION

TRAINING WITHIN INDUSTRY

District Offices

For information or advisory assistance concerning the training of workers while on the job, apply to the Training Within Industry district office nearest you.

Atlanta, Ga., Georgia School of Technology. 225 North Ave., N.W. (Hemlock 6890)

Baltimore, Md., Room 3106, Baltimore Trust Bldg. (Plaza 8170)

Boston, Mass., Room 1035, Park Square Bldg. (Hubbard 0380)

Chicago, Ill., Room 2600, Civic Opera Bldg. 20 No. Wacker Drive (Andover 3600)

Cincinnati, Ohio, Room 705, Union Trust Bldg. (Cherry 3740)

Cleveland, Ohio, 4th Floor, Union Commerce Bldg., Chester-9th St. (Cherry 7900)

Denver, Colo., Kittredge Bldg. 511 Sixteenth St. (Tabor 3173)

Detroit, Mich., 1st Floor, Boulevard Bldg. 7310 Woodward Ave. (Trinity 1-5500)

Houston, Tex., Room 3201, Gulf Bldg. (Capital 4201)

Indianapolis, Ind., Room 1408, Circle Tower Bldg. (Market 8511)

Los Angeles, Calif., 755 Western Pacific Bldg., 1031 So. Broadway (Richmond 0311)

Minneapolis, Minn., 326 Midland Bank Bldg. (Maine 3244)

Newark, N. J. Room 601, 605 Broad St. (Mitchell 2-1114)

New Haven, Conn., Room 515, 152 Temple St. (6-5186)

New York, N. Y., Room 2026, 11 West Forty-second St. (Murray Hill 3-6805)

Philadelphia, Pa., Room 1740, 12 South Twelfth St. (Locust 3400)

Pittsburgh, Pa., Room 360, Administration Bldg., Carnegie Institute of Technology (Schenly 2925)

Portland, Oreg., Room 1006, Bedell Bldg. (Broadway 8491)

Raleigh, N. C., Raleigh Bldg., Fayetteville and Hargett Sts. (2-3306)

St. Louis, Mo., Room 603, Shell Bldg. (Central 4206)

San Francisco, Calif., Room 702, Newhall Bldg., 260 California St. (Exbrook 0369)

Seattle, Wash., Room 960, Stuart Bldg., Fourth and University Sts. (Elliot 0200)

C. R. DOOLEY
Director

HEADQUARTERS OFFICE
Fourth Street and Independence Avenue, SW.
Washington, D. C. EXecutive-4660

WALTER DIETZ
Associate Director

8-2887-Bu-Oi-42

TRAINING WITHIN INDUSTRY

Washington, D. C. WAR MANPOWER COMMISSION October, 1942
(Rev. Dec. 1942)

Bulletin #4-C

JOB METHODS TRAINING PLAN

HOW TO IMPROVE JOB METHODS

You know materials are growing scarcer. Machines are difficult to get or replace. And manpower is getting to be a critical issue.

A big part of the answer is to develop better ways of doing the work you supervise with the manpower, machines, and materials NOW AVAILABLE.

Perhaps you worked out a better way to do one of the jobs you supervise today. If so, you made an important contribution to victory. But are you working out better methods every day?

Here is a Plan that will help you develop those BETTER JOB METHODS NOW. It will help you to produce greater quantities, of quality products, in less time.

The principles are not new. The Plan was worked out in its present practical and usable form by industrial men who are facing the same problems as yourself.

Use this plan every day. Use it on EVERY job you supervise. The more you use it, the more opportunities you will find to put it to work.

Today, the need is to improve JOB METHODS to help do the biggest production job in history! The need is for you to make MORE improvements and to make them NOW!

C. R. Dooley
Director
Training Within Industry

Job Improvement has always been a part of your job.

You are looking for improvements every day. This is, and always has been, a part of your job. Continued improvement of basic ideas has made our country what it is. Think of the automobiles of 15 years ago. Compare them with the cars of today. Remember the radio of a few years ago? And the airplanes? And the rifles - and guns - in fact, thousands of modern pieces of fighting equipment that were unknown a few years ago? All this progress is the result of improvement. Some of it is improvement in design to be sure. But much of it is improvement in the METHODS of production. You may not be able to do much about basic design, but you CAN do something about the production methods.

Go after the "small things."

Look for the hundreds of small things you can improve. Don't try to plan a whole new department layout - or go after a big new installation of new equipment. There isn't time for these major items. Look for improvements on existing jobs, with your present equipment.

The "WAY" you make improvements is of first importance.

Go back in your memory as a workman.

Remember the time you "put up" with a job because it was awkward and caused you needless trouble and worry? Remember the "better way" you finally worked out which would have made it safer and easier to do? Remember how you wanted to tell your boss about your idea but he wasn't the kind of a fellow who was easy to talk to, and you never mentioned it to him?

Or perhaps, you remember the time when the boss "sprung" his new method on you and you had a pretty tough time "swallowing" it.

You will NEVER forget the time when the boss "had an idea" and asked you for YOUR opinion about it, and how you made several good improvements in his plan and how pleased you were.

Then go back over your experience as a supervisor.

Remember the time you put a new idea "up to the boss?" It was rather poorly worked out and he found a "bug" in your plan right off? And you didn't propose any more.

Remember the time you really had a good plan, but you neglected to get some of your fellow supervisors and engineers "in on it" and the plan fell flat?

Then, of course, you will NEVER forget the "better way" you worked out, that was put into effect and that did work. You still can feel the satisfaction that it gave you.

How to Improve Job Methods.

BETTER JOB METHODS are needed NOW - desperately so - but there is a RIGHT WAY to make them. Here is the plan. It has worked in thousands of cases, and in practically every kind of industry. There are FOUR STEPS to follow. No one step must be omitted. No one step is more important than the other.

STEP I. BREAK DOWN the job.

1. List all details of the job exactly as done by the Present Method.

2. Be sure details include all:

   Material Handling
   Machine Work
   Hand Work

- take any job - take the first one you see in your department.

- just "start right in" - jot down on a sheet of paper every detail as it happens. Do this right at the job. Don't try to do it back at your desk. You'll overlook something if you do.

- don't be secretive or mysterious about it. Tell your workers what you are doing. Be frank and open about the listing of details.

STEP II. QUESTION every detail.

1. Use these types of questions:

   WHY is it necessary?
   WHAT is its purpose?
   WHERE should it be done?
   WHEN should it be done?
   WHO is best qualified to do it?
   HOW is "the best way" to do it?

2. Also question the:

   Materials, Machines, Equipment, Tools, Product Design, Layout, Work Place, Safety, Housekeeping.

   - Just start down your sheet of details. Start questioning each one.

   - You won't get far, usually, until some improvements will occur to you.

   - Perhaps a "BETTER WAY" will "flash" into your mind. Hold this "new idea" temporarily and question EVERY DETAIL on your list before you start to "hope out" the better way. If you stop to work your "flash," you may help only a part of the job, and overlook a broader or more useful improvement.

STEP III. DEVELOP the new method.

1. ELIMINATE unnecessary details.

2. COMBINE details when practical.

3. REARRANGE details for better sequence.

4. SIMPLIFY all necessary details.

   a. Make the work easier and safer.
   b. Pre-position materials, tools and equipment at the best places in the proper work area.
   c. Use gravity-feed hoppers and drop-delivery chutes when practical.
   d. Let both hands do useful work.
   e. Use jigs and fixtures instead of hands, for holding work.

5. WORK OUT your idea WITH others.

6. Write up your proposed new method.

- eliminating unnecessary details prevents waste of materials and manpower.

- combining and rearranging overcome "back tracking" and double handling.

- simplifying makes the job easier and safer to do.

- be sure to get all those concerned "in on" your idea from the start. Don't work out the new method and "spring it" on your people. This applies to your boss, your associates, and particularly to your workers. The best way of all is to work out your idea with them. Make them a part of it.

STEP IV. APPLY the new method.

1. Sell your proposal to the boss.

2. Sell the new method to the operators.

3. Get final approval of all concerned on Safety, Quality, Quantity and Cost.

4. Put the new method to work. Use it until a better way is developed.

5. Give credit where credit is due.

- the boss must be "sold" to get his approval for a trial run.

- the operator may need to know more about it to give the new method a fair test.

- the new method can yield increased production only after it's actually working.

- remember, today's best way, is only for today. Tomorrow there will be a better way - and you will work it out!

- stealing an idea is really a form of sabotage. Be open-minded to suggestions, even if many of them are "wild ideas." A really good one will come along that can contribute to victory.

Often a new method will "pop" into your mind without working through these FOUR STEPS. This is to be expected at the start. However, these "flashes" will soon be exhausted. Don't expect them to continue. For consistent improvement, you must think your way carefully through ALL of the FOUR STEPS. You will have to dig beneath the surface for most of your improvements.

Make the job easier and safer.

Remember, your purpose is to make jobs easier and safer - NOT to make people work harder or faster. This is NOT a speed-up plan. It IS to show people how to work more effectively. Keep this basic purpose clearly in mind and you can't fail. Furthermore, you will find "improving job methods" is an interesting undertaking. Most important of all is the fact that you will contribute to VICTORY!

WAR MANPOWER COMMISSION
Bureau of Manpower Utilization

Nothing in here about equal pay

THE EMPLOYMENT OF WOMEN:
Facing Facts in the Utilization of Manpower

DIVISION OF OCCUPATIONAL ANALYSIS AND MANNING TABLES
June 1943

7-1261-Cover

FOREWORD

The Division of Occupational Analysis and Manning Tables, of the Bureau of Manpower Utilization, initiated a Manpower Analysis program in the late Fall of 1942.

The purpose of a Manpower Analysis is to present to the employer and to the War Manpower Commission a complete picture of the manpower problems within the plant in order to provide a factual basis for maximum utilization of workers' skills. Employers' participation in the program is entirely voluntary.

Manpower Analyses are plant studies made as a service to management by Occupational Analysts assigned to the War Manpower Commission's field offices. The first part of each study consists of a Manning Table, including a complete inventory of jobs in the plant, the training time required for each job, the number and sex of workers, the number of physically handicapped persons employed, the distribution of male employees by Selective Service Status, and the estimated future labor needs. The second part is an analysis of the labor utilization practices in the plant and the problems involved it, such as training, housing and transportation difficulties, turnover and absenteeism.

The greatest value of a Manpower Analysis is the assistance rendered to the establishment in which it is made. Responsibility for optimum labor utilization, and ability to promote and ensure it, rest with the individual employer. On the other hand, it is often possible to give him very real assistance through techniques about which he may not be informed, through a point of view not restricted to one plant or one industry, and, above all, by giving an impetus to his consideration of labor utilization problems. The Manpower Analyses have pointed out many of the actual reasons for failure to utilize women as a source of labor and have indicated some solutions to problems involved in the employment of additional women in plants, or their introduction to establishments that are using only men in the production departments. This information, amplified by research into recent publications, is made available in the following article so that the "know how" reported by one Analyst can be circularized among the persons who may be faced with similar problems.

THE EMPLOYMENT OF WOMEN:

FACING FACTS IN THE UTILIZATION OF MANPOWER

To increase the Armed Forces to the published estimate of 10.7 million in December 1943, approximately 4.1 million men who can meet military standards must be withdrawn from civilian life. Because of the curtailment of non-essential activities, some of these men will not have to be replaced in their former jobs. However, war industries need an increasing number of workers and the total of those engaged in agriculture must be maintained at least at present level. It has been estimated that during 1943, 2.7 million persons must be added to the number in the labor force and the Armed Services at the beginning of the year. Most of these 2.7 million persons will be women, largely housewives who are entering the labor market.

Although it is generally accepted that current and future labor demands can be met only through large scale employment of women, it is often difficult for individual management to relinquish traditional personnel policies. The employment of women in war industries is increasing daily, but their number still falls far short of the actual need for them if we are to attain the production volume required for global warfare.

Even after the decision is made to employ women, many questions remain and some problems arise which are difficult to meet with the rather limited experience and information available at the local level.

Certain facts seem to be clear from experience with the employment of women in this country:

Many firms have reported higher production by women in comparison with men on similar jobs.

The traditional idea of jobs "suitable" or "unsuitable" for women should be reconsidered in the light of the fact that women are known to be performing almost every type of job.

Separate or additional restroom facilities must be provided and some minor changes, such as raising benches, providing chairs and installing lifting or conveying devices are sometimes necessary before introducing women into many jobs.

Once women are employed in a plant, male employees generally have had little objection to additional women workers, and few of the disciplinary problems which some employers fear ever develop.

Although there is no new major problem brought into supervisory work in connection with supervising women, the phrase "more thoughtful supervision" seems to indicate what is needed in the handling of women who are new to industry.

General experience indicates that women have a better accident record than men, particularly if certain safety precautions are observed.

Damage to tools and materials is often less than when similar work is performed by men.

Turnover is reduced by the employment of women, although their absenteeism record in the past has been somewhat poorer than that of men.

Women already living in the vicinity of a plant constitute a source of additional workers without aggravating the housing shortage. However, the employment of the mothers of young children creates such problems that Mr. Paul V. McNutt, Chairman, War Manpower Commission, has stated . . . no woman responsible for the care of young children should be encouraged or compelled to seek employment which deprives her children of her essential care until after all other sources of labor supply have been exhausted."

Production Records

Even though the scope of occupational opportunity for women was formerly limited by traditional practices, those who were employed generally proved themselves to be capable workers. Recently better production records have been reported by many firms for women in comparison with men on those jobs which had been held only by men prior to the war. This, of course, may be attributed to several reasons, one of which is the possibility that only the best qualified women applicants have been accepted so far. Another element may be that when they are faced with prejudice, women regard it as a challenge to be overcome through superior work.

Jobs "Suitable" for Women

As women on the average have only a little over half a man's strength, physical requirements will affect the desirability of certain jobs for them, but it cannot be categorically stated that any particular occupation is absolutely unsuitable for women. United States Census figures for 1940, recent reports of placements of women, and the experience of England, Germany and Russia prove that women are actually performing an almost limitless number of jobs, many of which require considerable physical exertion. As in all careful placement work, it is a matter of selecting the proper worker for the job. Just as some men do fine needlework, there are many women who are too "heavy handed" to perform delicate manual tasks. Although the average male is stronger than the average female, there are many men of slight physique and many women whose strength equals that of the average man.

The average woman, being about 4" shorter than the average man, is frequently at a disadvantage when called upon to reach to heights above head-level. However, women 5'8" tall should have no difficulty filling any job requiring reaching suitable for the average man.

Manpower Analyses have pointed out that the bulk and weight of materials to be handled in certain jobs is one of the major reasons advanced by the employer for not employing women. However, there is such disparity between establishments in this factor that in a great number of cases it can be overcome by managerial initiative and ingenuity in job re-engineering. Hoists for raising weights to work level, conveyor belts, and other mechanical devices have been installed in many factories to aid the workers. Other plants have broken down jobs so that a strong laborer does all the

the heavy carrying and lifting for a group of women, leaving them free to give full time to the operation of their machines. The examples of jobs filled by women in the recently released "War-Time Employment of Women in the Iron and Steel Industry in Great Britain" throw considerable light on the arduous work that can be done by women and the usefulness of such minor technological changes in tasks as the substitution of smaller shovels.

Even when the weights to be lifted or carried on the job are not very heavy, the small amount of time needed to train women, or men, in proper methods will be well repaid by decreased fatigue and greater efficiency and safety.

The Women's Bureau of the Department of Labor recommends that weights be carried on the shoulder. Although this method is primarily intended to conserve strength and protect the worker's health it is particularly important that it be observed in going up or down stairs, or in any situation where a restricted range of vision might add to the accident hazard. To prevent undue abdominal strain in lifting objects the worker should stoop down by bending her knees and not her back, keep the feet close to the object to be raised, use a narrow stance, the feet approximately 8 to 12" apart, and put the brunt of strain on leg rather than back muscles.

One rather surprising fact disclosed by the Manpower Analyses was the number of males still employed in clerical occupations. Although clerical work is the obvious field for replacement of men by women, a tabulation of 22 studies* covering a total number of 83,314 workers shows that of the 4,490 employed in clerical occupations, 3,084 were men. Only 201 of these men were above the age of 45, which seems to indicate that a great many of the remaining number are eligible for military service.

A few of these clerical occupations are in production departments, necessitate lifting heavy parts, require considerable knowledge of shop operations, patterns, dies or castings, and in some cases have been stated to be unsuitable for women. The unsuitability of these jobs for women is particularly open to question as few of the jobs require a long training period, and the physical demands could be met by strong women or be decreased by having one laborer perform the heavy lifting if mechanical aids were either not obtainable or not feasible. In any case, it appears logical that able bodied men in clerical occupations could be transferred either to these jobs in plants or trained to perform machine or other production operations where physical requirements seem too high for the average women. It is also interesting to note that of the 3,084 men employed in clerical occupations in the plants covered by Manpower Analyses, only 33 were reported to have any type of handicap.

Plant Facilities

One of the reasons frequently mentioned for the unwillingness to employ women is the lack of restroom facilities and the difficulty in securing plumbing equipment because of material shortages and priorities. In some cases, of course, the difficulty is being exaggerated as, if the plant plans to increase its labor force and does not

*Several Manpower Analyses did not include administrative and clerical personnel in the Manning Table for the plant, and, therefore, are omitted from this tabulation.

have sufficient restrooms now, it will have to install or expand them, regardless of the sex of the workers to be employed.

The problem, when it actually exists, is most severe in old plants since the majority of new industrial buildings provide facilities for women. In many instances the difficulty can be overcome by minor alterations in physical layout, and this is the first possibility to be explored. Other plants faced with the same situation have made successful appeals to local real estate firms and property owners for sale or donations of such Secondhand fixtures as were exempt from War Production Board restrictions. In all cases the nearest field office of the War Production Board should be contacted immediately and the labor utilization implications explained. Since regulations concerning materials must necessarily change frequently, the various solutions can best be determined by "on the spot" cooperation with the agencies involved. It is urged that, if restroom facilities need to be improved or increased, action be taken immediately, as further delay will only increase the difficulty in securing materials.

State Laws

Federal and State laws prohibiting the employment of women in certain hazardous work affect a small percentage of occupations and must be given due consideration. A plant considering the employment of women should consult the Department of Labor representative during the initial planning period. As reported in Manpower Analyses, the Department can be of great assistance in clearing up misunderstandings on laws and indicating the minor equipment changes necessary to meet accepted standards.

The proper State Department should also be contacted concerning hours and shifts of work for women.

Union Membership

In the past, because of labor market conditions, some local unions discouraged the employment of women in closed shops. However, because of the present conditions and the expressed and demonstrated interest of unions in promoting war production and maximum labor utilization, this picture has changed, and contracts are being rewritten or amended. If an employer's use of women as a source of needed additional labor is impeded by a local union regulation, it is probably possible to secure the union's cooperation after the need has been explained.

Prejudice of Other Workers

Another factor which has appeared in a sufficient number of studies to become significant is that, although top management favors the introduction of women, foremen and other workers are opposed to it. It is logical to some extent that this would be true. The foremen are immediately affected by the employment of women and the personnel and training problems which arise in the initiation period, whereas top management is primarily concerned with meeting production schedules and, in so far as possible, without disturbing employer-employee relations, using all sources of labor to accomplish this aim. Also, it is natural that a foreman concerned with only one department would find it more difficult to grasp a problem in its widest aspect, as a component in the over all labor picture.

Management publications, in particular, have paid considerable attention to this problem and emphasize that it is necessary to secure the wholehearted cooperation and support of foremen, key men and machine operators by having them understand the reasons for the change. Much of the opposition voiced by male workers to the employment of women is merely the repetition of a traditional sentiment. In most cases the objection will disappear when the necessity for increased production, the shortage of labor, the ever expanding needs for war materiel, are explained. Enthusiastic championing of the cause by top officials and the plant labor-management committee will soon have its effect. If the men understand that they are not being displaced but are being freed for more essential contributions to the war, for work which cannot be done by anyone else, it is probable that the point of view of the higher officials will be adopted by the mass of employed personnel.

Here again a small amount of time spent in preparation will pay remarkable dividends. Much of the foremen's opposition is based on fear of the problems they will be faced with, including the idea that they will have to make machine workers out of women who traditionally are thought to be lacking in "mechanical aptitude". Personnel experts point out that there is very little difference between male and female applicants in true mechanical aptitude. It should be explained to foremen that the difference is not one of ability but rather of experience in handling tools, machine knowledge or familiarity, which can be overcome in a short pre-employment training period and is counterbalanced by women's eagerness to learn.

Training Women Workers

Manpower Analyses indicate that in some areas there is an insufficient supply of women trainees and that employers are failing to take full advantage of the vocational training facilities available to them.

In the few cases where dissatisfaction has been expressed with the vocational trainees hired, it is learned that there has been poor correlation of the training course with the work to be done on the job. Lack of active cooperation at the local level between employers, the U. S. Employment Service and vocational education authorities is largely responsible for these isolated failures.

In some communities the vocational education opportunities for women have been restricted because, with limited time and space, the schools had to train first the workers most acceptable to employers. When an employer makes his demands known to the U. S. Employment Service and the vocational authorities, there will be an incentive and a purpose in training more women. It is interesting to note that the Manufacturers Association of Connecticut, in advocating the cooperation of employers with local vocational education agencies, stated in June 1941 "State Vocational Schools will literally train employees to your order."

Besides teaching them to perform on the job, pre-employment and pre-production training for women results in the following benefits: It breaks the shock of change from home life to industrial work; reduces the fright reaction to noise, dirt, speed and danger of machinery in motion; saves shop training time; effects economy of materials; and reduces danger of injury to new operators and other employees. The school will maintain the interest of women volunteers while they are waiting for a place in production, and sift out those who are unsuitable for the job. In addition,

there is substantial evidence to indicate that training reduces labor turnover.

As women normally have little if any experience in handling tools, it is necessary that their training be started on a more elementary level, and that careful supervision be given them at the beginning of their training. Although all inexperienced workers benefit from a planned training program, it is particularly important that women receive a pre-employment or pre-production course, which will give them the elementary knowledge the average man has acquired as a boy, even before he had any industrial experience. A specially selected person who can understand and be sympathetic to women's problems in their unfamiliarity with tools, mechanical devices, shop terms and practice, should teach women during their initiation period. So much of a woman's future adjustment to the work situation depends on this early training period and her initial contacts with the machine and the plant, that the idea of "more thoughtful supervision" cannot be overemphasized.

Current experience is proving that although women entering machine operation fields may begin with this handicap, they learn rapidly and can soon catch up with the men in the class. Some companies are reporting that the over-all training time for women is actually shorter than that required for men on the same operations.

Particularly because the feeling has existed that women are lacking in mechanical ability and the majority of the women now entering the market have little if any work experience, aptitude tests, such as those offered by the U. S. Employment Service of the War Manpower Commission, will be of great aid in proper selection of workers to be trained.

Women Foremen or Supervisors

There is at present quite a wide divergence of opinion on the desirability of having women in industrial departments and machine shops to supervise other women, or both men and women. Since many women are successfully filling responsible positions in production departments as supervisors, foremen, sub-foremen and leaders, this is again not a question of the "suitability" of women for supervisory work, but of proper selection of the individual. Whether or not a plant develops women foremen will depend largely on the training it can give and the speed of its upgrading program.

One point of particular importance on which employers agree is that when a woman is assigned supervisory duties, she should be given the full complement of authority and responsibility of the job and her position must be made clear to the workers under her supervision. Otherwise it is likely that they will by-pass her and take their problems to and expect to receive their orders from a man who they feel has more authority.

A woman leader or foreman may have to meet more exacting standards of ability, leadership and fairness than a man filling the same position as many workers are more critical of a female than a male supervisor.

The Personnel Department and Women Workers

There is some disagreement on the question of whether or not women applicants should be interviewed by women personnel workers. This is the rule in England, both in the Employment Exchanges and in individual establishments, and is agreed to by many plant officials and personnel experts in this country. Others believe the opposite, or that either a man or woman is equally suitable. Again it would seem that the sex of a personnel worker is not so much the criterion as his or her interviewing ability. However, a woman interviewer, because of her first-hand familiarity with the problems of the woman worker, can in many cases get a more complete picture of those elements in an applicant's personal background which affect her attendance and performance on the job, and a better selection may result.

Experience indicates the advisability of having at least one person in the plant, as personnel official or women's counselor, to whom the women workers can take their special problems and difficulties, even if these matters are not directly related to the work. Particularly because some of the problems are personal in nature, it is preferable to have a woman in this position, and the Women's Bureau of the U. S. Department of Labor further points out that she should have both personnel and industrial training. Great care should be exercised in her selection as she must be capable of appreciating the worker's difficulties and of interpreting the plant's policies to them.

Safety Records

Some employers have been reluctant to hire women because of the hazards in machine and other industrial operations. However, records seem to indicate that the accident rate of women is lower than that of men.

Pre-employment training of new workers can do much to reduce the danger of injuries, and instructions in safety methods, particularly in proper techniques of lifting and carrying weights if such tasks are involved in the job, should be given to all new workers, regardless of sex. In many establishments special attention should be paid to work clothes and shoes.

Women's traditional clothes, style of hair, and shoes are not suited to many industrial occupations. It is important that protective clothing, when it is needed, be designed to meet individual plant and job conditions.

Whether safety clothing has to be worn because of the nature of the job, or the plant prefers a uniform for the sake of neatness and general appearance, it is desirable to consult the women workers themselves, or at least to ask women's advice when choosing styles. The uniform selected should be as attractive as possible, for, otherwise, some women will seriously object to wearing it. To a woman on her first job, when she has never seen an industrial accident, its possible tragedy seems very remote from the immediate unpleasantness of having to wear an unbecoming cap.

A company requiring the wearing of a particular type of clothing will make the enforcement of its policy much easier if the reasons for wearing the clothes, as well as for other safety regulations, are explained to each new worker and a clear and firm

stand is taken before the worker is hired.

Damage to Tools and Materials

General experience seems to indicate that in the case of women workers, damage to tools and materials is considerably less than when similar work is performed by men. This is particularly true where women are operating small machines, using small parts or handling delicate mechanisms. The reason is perhaps found in women's habit of handling breakable objects with care in their regular housekeeping duties.

Turnover

There are no periodic statistics on turnover for men and women separately. Comments from employers in general add up to "low", "negligible" or "inappreciable" for women, but "high" for men. In the isolated reports of high turnover for women, the reasons given are lack of facilities for child care, transportation difficulties, low wages in comparison with neighboring plants, and so on.

One reason for the lower turnover rate of women is that women are not subject to military draft. This is only one of the factors involved. Another of the causes is the fact that in many areas employment opportunities for women are still limited to the extent that there is little incentive to "shop around" for a better job as many male workers are doing. However, it is the opinion of many authorities that if women are able to make satisfactory home arrangements, they are generally more stable in job tenure than men.

Since labor turnover is one of the most distressing problems affecting American production, a lowered rate, whatever the reasons for it may be, is a great economic asset to a plant.

Upgrading and Motivation

It is too often forgotten that workers are affected by and respond to incentives other than increased wages. Opportunity for upgrading may be just as important an incentive as immediate monetary gain. Although much has been written about women's ability to do monotonous work, this should not be considered as a limitation or accepted as true for all women or for all levels of intelligence and initiative. Ambition and the desire for self-improvement, for greater responsibility and more interesting work are present among women, just as in men. Increasing numbers of women are beginning to accept the concept that they will have to earn a living for the length of their productive years, and to desire and plan for advancement at whatever occupational level it may be. War casualties will leave a number of women in the position of having to support themselves and their families.

Many women, particularly those who had worked before the present emergency, have so often been made to feel that their occupational and promotional horizon was limited by forces beyond their control, have so frequently worked at unequal wages and with less recognition in the way of title and authority than men performing the same work, that they not only are most eager for but respond to a surprising degree to any promotional opportunities given them.

A program of supplementary training, of worker observation to note individual skills and unusual aptitudes, and of upgrading whenever possible, should be part of any personnel planning and action. However, in many cases it has been limited to the male working force. This type of program is even more important when women are employed in a plant formerly staffed entirely by men, as the women present a new and untried group of workers, whose ability has not been demonstrated through past accomplishment, and who, because of varying aptitudes, may develop at unequal rates of speed.

The knowledge that upgrading possibilities exist will have a great motivating effect. Of course, this cannot be a promise unfounded in fact, as the resulting disillusion is one of the worst detriments to morale that can exist, and the program should be carried out with all the energy with which it was planned.

In planning an upgrading program, employers may find it helpful to use the Job Families developed by the Division of Occupational Analysis and Manning Tables, of the War Manpower Commission.

Absenteeism

Although men's absences have increased recently, in some cases to the extent that there is little differences between the sexes in this respect, the normal absenteeism rate for women has been somewhat higher than for men, not only in this country but also in England and Germany. However, the courses of action to meet the problem are more clear cut in the case of women. When women are absent from work, there is usually some pressing reason, such as illness or home duties.

Much absenteeism can be averted by a careful interview before a worker is hired to determine her home status and to assist her in making any necessary arrangements. A systematic but understanding follow up should be made to determine and, if possible, take steps to remedy the specific causes for absences.

The methods employed to discourage absenteeism among men, such as patriotic posters, attendance bonuses, etc., will have their effect on the female working force, but additional problems must be taken into consideration.

Several studies have shown that women are ill more frequently than men. A survey by the National Institute of Health in the winter of 1935 to 1936 included a study of the disability of some 280,000 white persons in 8 cities. Approximately 34,000 of these were white women workers 15 years old or over. The rate of illness of women 15 to 64 years of age was about 28 per 1,000 in contrast to 22 for male workers. Women experienced a higher sickness rate than men in each age group. The Boston Edison Company in analyzing all disabilities of 1 day or longer occurring in the 5-year period 1933 to 1937 found that male employees lost an average of 6.4 days a year because of illness; female employees an average of 9.9 days.

This higher illness rate, which is one of the main reasons for women's absenteeism, adds further emphasis to the importance of health conditions in the plant. Properly spaced rest periods, which are also beneficial for men, greatly reduce fatigue, improve production and safeguard the workers' health. A well equipped first-aid or emergency room is essential, and should include a cot or bed.

Nutrition is such an important health factor that the eating facilities for workers should receive special attention. Workers should be able to secure nourishing meals at reasonable cost, and within close distance to their work stations. Education in the selection of foods is also advisable, as, where workers are permitted a choice, they often buy more soft drinks than nutritious food.

Home responsibilities are generally recognized to be the second major reason for the higher absenteeism rate of women. No matter how intense a woman's interest in her job may be, her children must be cared for, the work of running a home falls on her, and she must have time for shopping. Both the woman's peace of mind, with the resulting improvement of quality and quantity of work, and her attendance on the job will be greatly improved if the problem is considered and steps are taken for its improvement both by the employer and the community.

The employer's main contribution will be in planning hours and shifts of work with the women's point of view in mind, and in placing individual women on the shifts most suitable for their requirements. It is generally accepted that night work is highly undesirable for women. However, when women have to be used on second or third shifts, some employers have adopted the practice of rotating shifts to distribute the burden of night work and equalize employment conditions. The concensus of health and labor authorities is that shifts should not be changed as often as 2 or 3 weeks, nor at intervals so long as to develop chronic fatigue of the night worker. The most desirable frequency will depend to a degree on plant conditions, and all possible measures should be taken to protect the workers' health when night work is necessary.

However, the wartime employment of women, particularly of housewives with small children, creates problems which cannot be successfully attacked from only one angle or by a single group. The best results have been achieved when all elements in the community have cooperated and worked together.

Not only as a factor in absenteeism but also from the broader point of view of individual and community welfare, the care of small children is the most important home duty of any working mother. The Office of Community War Services and other governmental agencies, and welfare, church, social, service and trade union organizations have rendered great service in this field by opening and expanding day nurseries, kindergartens, and after school play centers.

Many of these organizations have also been instrumental in providing recreational facilities for women workers. The lack of opportunity for normal relaxation and social activity is definitely related to the discontent and absenteeism of many workers. The problem is specially acute in the case of night shift workers.

In order that working women may be able to shop without taking time off from work, Merchants Associations in many towns and cities have agreed to change shopping hours so that stores remain open at least one night a week. Similarily doctors, dentists, lawyers, banks, and beauty parlors have cooperated by changing business hours to accommodate industrial workers.

However, in many communities, particularly those which war production has turned into boom centers, the inadequacy of community services and facilities is a very real cause for dissatisfaction and absenteeism. Although this has not been generally

accepted as being an employer responsibility, the influential industrialist can do much by pointing out the needs and marshalling the community resources into action.

. . . . . .

In many areas, because the local labor market has been literally drained of men and the housing situation prohibits the importation of additional persons, the question of whether or not to employ women has become academic. Women constitute the main supply of labor in these communities. In other areas, where the labor shortage is not so severe, there is still some choice in the sex of workers to be hired, but the employment of well qualified women should be urged as part of a foresighted, long range labor utilization program.

The problems involved in the employment of women are neither as numerous nor as complicated as they are traditionally thought to be. The experience of the majority of plants has been that women generally are highly satisfactory workers, and that they bring an enthusiasm and an eagerness to learn which contribute greatly to the morale of the entire working force.

This seems to be the field in labor relations in which the greatest results can be achieved with the least effort, but this effort to be most effective should take the form of intelligent and energetic planning from the very beginning, preferably before any women are employed. This report has attempted to present the various aspects of the major questions involved in the belief that this type of approach may assist analysts, personnel workers, and employers in the constructive planning which must be done at the local level to meet each individual plant's situation.

The recruitment of women workers presents problems of a somewhat different nature and has not been incorporated in this statement. However, here again, the great need is for effective planning based on an understanding of the group to which the appeal is addressed.

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Federal Security Agency
U. S. OFFICE OF EDUCATION
Washington

ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING

List of Approved Courses

From July 1, 1942 Through January 31, 1943

CAPITALS indicate FULL-TIME courses; lower case, part-time. The city first listed is the location of the institution; other points at which instruction is given follow in parentheses. Subjects marked with an asterisk (*) are available in more than one city. Courses that have been approved but subsequently cancelled are omitted from this list. Further information about any course - content, prerequisites, time and place of next section, etc. - must be obtained from the respective institutions.

ALABAMA

Alabama Polytechnic Institute, Auburn (At approximately 20 centers in Alabama)

Accounting, Advanced (Inservice)*
Aerial Mapping & Photogrammetry (Ins.)
Air Defense Engineering
Aircraft Fabrication
Aircraft Standards
Aluminum & Its Alloys, Fabrication of
Aluminum Metallurgy
Analytical Chemistry, Theory of
Architectural Drafting
Auditing (Ins.)*
Aviation Fundamentals (Ins.)
Ballistics Engineering (Ins.)
Carding Room Management (Ins.)
Chemical Engineering for Prodn. Supvn.*
Chemical Process Plant Equip. (Ins.)*
Chemical Production, Analytical Control of (2 C.) (Ins.)*
Chemistry, General (Ins.)*
Coke Oven By-products
Construction Engineering*
Cost Accounting*
Descriptive Geometry
Electrical Engineering I*, II*
Electrical Furnaces*
Engineering Drawing I*, II*
Engineering Drawing I (For Negroes)
Engineering Materials
Engineering Mathematics (2 C.) (Ins.)*
Explosives & Chemical Warfare (Ins.)*
Ferrous Metallurgy*
Fire Prevention Engineering (Ins.)
Foremanship Training*
Foundry Theory & Practice*
Highway Engineering*
Hydraulic Engineering
Hydro-power Plant Engineering
Industrial Accounting (Ins.)*
Industrial Air Conditioning
Industrial Electricity (Ins.)*
Industrial Instrumentation*
Industrial Lubrication
Industrial Maintenance*
Industrial Refrigeration
Industrial Statistics*
Machine Shop Management (Ins.)
Maintenance, Mechanical & Electrical*
Marine Machinery (Ins.)
Materials Handling
Materials Testing & Inspection*
Naval Architecture
Office Management (Ins.)*
Personnel Management (Ins.)*
Physical Chemistry*
Pipe Drafting (For Negroes)
Plane Surveying*
Plastic Technology (Ins.)
Production Control
Production Engineering*
Production Management (Ins.)*
RADIO COMMUNICATIONS (Pre-radar) (Ins.)
Radio, Fundamentals of I*, II*
Reinforced Concrete Design & Construction
Route Surveying
Safety Engineering*
Sanitary Engineering

(continued)

Alabama Polytechnic Institute (continued)

Ship Construction*
Ship Drafting
Shipfitters' Engineering
Steam Power Plants
Structural Design
Structural Engineering*
Time & Motion Study
Tool Engineering*
Topographic Surveying*
Traffic Management (Inservice)*
Weaving & Weave Room Methods
Welding Engineering*

University of Alabama, University (At approximately 20 centers in Alabama)

Accounting for Industry*
Air Traffic Control Tower Operations
Aircraft Descriptive Geometry
Aircraft Instruments
Aircraft Materials & Processes
Alternating Currents, Theory of
Ammonia Plant: Design, Operation & Control (Ins.)
Auditing (2 Courses)(Inservice)
Blast Furnace Metallurgy (Inservice)
Chemical Engrg Oper. & Equip. (Ins.)
Chemical Engineering for Explosives Manufacture & Ammunition Loading
Chemical Lab. Technicians, Course for
Chemistry, General (Inservice)
Chemistry of Aluminum Production (Ins.)
Chemistry of Powder & Explosives A, B
Coal Mining Ventilation, Prin. of (Ins.)
Construction Estimating (Inservice)
Direct Currents, Theory of
Electrical Engineering (2 C.)(Ins.)*
Electrical Metering, Practical (Ins.)
Employment Management (Inservice)
Engineering Calculations, Elem. (Ins.)
Engrg. Drawing & Engrg. Prob. (2 C.)*
ENGINEERING DRAWING & FUND. MATH.*
Executive Supervision (Inservice)
Ferrous Metals & Their Alloys
Ferrous Metallurgy (2 Courses)
Ferrous Metallurgy (For Women)
Ferrous & Non-ferrous Metallurgy (Ins.)
Foremanship & Supervision (2 C.)(Ins.)*
Foremanship & Supervision (Negroes)
Gages, Design & Checking of
Hull Construction, Principles of
Industrial Accounting (2 C.) (Ins.)*
Industrial Accounting Prob. (2 C.)(Ins)*
Industrial Chemistry (Inservice)*
Industrial Chemistry (Negroes) (Ins)*
Industrial Cost Accounting (2 C.) (Ins)*
Industrial Electrical Control
Industrial Electrical Control - A. C.
Industrial Electricity (Negroes)
Industrial Instrumentation (3 Courses)*
Industrial Materials, (2 Courses) (Ins)*
Industrial Purchasing (2 Courses)*
Industrial Psychology
Industrial Refrigeration (Inservice)
Industrial Safety Engineering
Industrial Safety & Safety Admin. (Ins.)
Industrial Statistics, Principles of
Industrial Traffic Mngmt. (3 C.) (Ins.)*
Instrumentation & Control, Adv. (Ins.)
Labor Legislation (Inservice)
Labor Relations (Inservice)
Maintenance, Mechanical & Elec. (2 C.)
Marine Diesel Engines: Installation, Operation & Maintenance (Inservice)
Marine Electricity, Principles of
Marine Steam Engineering, Advanced
Materials, Procurement Problems (Ins.)
Materials, Purchasing & Procurement of
Mathematics, Fundamentals of
Mathematics for Engineers (Inservice)
Math. for Teachers (Correspondence)
Mechanical & Electrical Problems & Practice (Inservice)
Mechanics, Analytical
Mechanics, Applied
Mechanics & Materials, Applied
Moment Distribution for Indeterminate Structures
Motor Freight Rates & Traffic Mngmt.(3 C)
Office Management (Inservice)*
Oils, Greases, & Lubrication*
Operation Analysis
Operation Analysis (Abbrev.) (Ins.)*
Operation Analysis & Time Study (Ins.)
Ordnance Inspection, Advanced
Ordnance Inspection, Coord. Course for*
Ord. Inspn., Coord. Course for (Abbrev.)
Ordnance Materials, Destructive & Non-destructive Testing of (Ins.)
Ordnance Materials, Inspection of
Ordnance Safety (Inservice)
Payroll, Taxes and Accounting

(continued)

University of Alabama (continued)

Personnel Control
Personnel & Industrial Psychology, Adv.
Personnel Management (Inservice)*
Physico-chemical Measurements (Ins.)
Physics
Physics for Teachers (Correspondence)
Plane Surveying, Advanced
Plane Surveys (Inservice)
Plant Organization & Layout (Ins.)*
Plant Protection Supervision (Ins.)
Plant Research & Plant Operation (Ins)
Production Control (Inservice)*
Production Planning
RADIO TECHNOLOGY*
Safety Engrg for Explosives Manf.(Ins)*
Ship Drafting*
Shipbuilding: Electric Machinery
Shipbuilding: Hulls
Shipbuilding: Planning & Scheduling
Shipbuilding: Procedure Analysis & Job Control (Inservice)
Shop Management A, B (Inservice)
Standard Costs (Inservice)
Standard Cost Accounting
Steel, Making, Shaping & Treating (I)*
Steel Plate Dsgng. & Layout I, II (Ins)
Stock Room Control*
Stress Diagrams
Structural Design (Inservice)
Structural Detailing, Prin. of
Surveying (Short Course)
Testing, Destructive & Non-destructive
Textile Org. Matls., Design Inspn. of
Time Study (Inservice)*
Tool Engrg. for Ordnance Prodn. (Ins.)
Topogr. Aidel Drafting I, II
Transportation & Traffic Mgmt. (3 C.)
Wage Determination & Payroll Accounting
Wage Payment Systems (Inservice)
Welding Metallurgy (Inservice)

ARIZONA

University of Arizona, Tucson (Phoenix, Yuma)

Engineering Drawing
Radio, Fundamentals of I*, II

ARKANSAS

University of Arkansas, Fayetteville (at approximately 20 centers in Arkansas)

Aerial Mapping, Advanced
Chemistry of Explosives*
Drawing, Advanced
Government Costs & Problem Procurement & Accounting (Inservice)
Industrial Safety Engineering*
MATHEMATICS*
Mathematics (Inservice)
Mathematics for Teachers (Correspondence Course)
Mechanical Drawing
Personnel Administration (Inservice)*
RADIO*
Physics for Teachers (Correspondence)
RADIO COMMUNICATIONS (Pre-Induct)
Radio, Fundamentals of I*, II*
Surveying & Mapping
Surveying & Mapping with Aerial Photography
Topographic Drafting*

CALIFORNIA

California Institute of Technology, Two Area (Burbank, Eagle Rock, El Segundo, Glendale, Hollywood, Long Beach, Los Angeles, San Bernardino, Terminal Island, Van Nuys, Venice, West Los Angeles, Whittier)

Aerodynamics, Introduction to (Ins.)
Aeronautics, Complete Library
Phenomena in (Inservice)
Aircraft Descriptive Geometry (Ins.)
Aircraft Detail Design Practices (Inc.)
AIRCRAFT WELDING (Inservice)
Aircraft Fitting Analysis
Aircraft Instrumentation, Theory of
Aircraft Liaison Engrg. Procedure (Ind) (continued)

California Institute of Technology (continued)

Airc. Materials & Processes (Ins.)
Aircraft, Plastics Applied to
AIRCRAFT PRODUCTION ILLUSTRATION
Aircraft Technical Sketching II (Ins)*
CHEM. & PHYSICS OF PHOTOTRACING I
Chem. & Physics of Phototracing I
Cost Analysis & Control
Cost Estimating
Die Design, Advanced
Die Design & Press Work
Electric Welding: Theory & Science
Electrical System Design Drafting I
Electronic Circuits & Apparatus
Engineering Drafting I, II
ENGINEERING FUND. (JR. Engr. Supp.)
Engineering Materials & Processes
Engineering Mathematics
Engrg. Mathematics, Fund. of (Ins.)
Engineering Mechanics (Ins.)
Engineering, Statistics Applied to
High Frequency Radio Engineering
INDUSTRIAL DRAFTING
Industrial Electrical Control (2 C.)
Industrial Management
Industrial Materials, Iden. of
Indus. Rel. for Supervisory Personnel
Industrial Training (Ins.)
Machine Design I
Map Drafting
Materials Testing Laboratory
Math. for Aeronaut. Engrg., Adv. I*, II
Mechanical Vibrations (Ins.)
Metallography Laboratory
Mineral Concentration & Prodn. Meth.
Motion & Time Study (2 Courses)
PERSPECTIVE
Perspective*
Physical Metallurgy for Engineers
Physics, Basic
Physics, Refresher Course in A, B
Plane Table Topography
Plant Layout & Materials Handling
Plastics, Tech. & Mfr. of (Ins.)
Procurement of Materials
Production Control
Production Design (Ins.)
PRODUCTION ILLUSTRATION
Production Illustration
Psychological Tests in Business & Industry, Uses of
Radio Engineering
Radio, Fund. of I*, II*
Selection & Place. of Personnel
Ship Drafting
Ship Production Illustration (Ins.)
Strength of Materials
Struct. Design in Wood (Ins.)*
SURVEYING
Tool Engineering
Tool Planning (2 Courses) (Ins.)
Tooling Problems, Adv. (Ins.)
Topographic Map Drafting
Train. Personnel, Techniques of
Ultra-high Frequency Techniques I, II
Wage & Salary Deter. & Job Analysis

Occidental College, Los Angeles

Chemistry of War Materials
Physics for Teachers
Trigonometry for Teachers

Stanford University, Stanford University (Eureka, Los Angeles, San Francisco, San Mateo, South San Francisco, Sausalito)

Acctg. for Gov't. Contracts (Ins.)
AIRCRAFT DRAFTING
AIRPLANE STRESS ANALYSIS & DRAFTING
CHEM. LAB. TECHNICIAN TRAINING (Women)
Cost Accounting*
Electron Tube Circuits
ENGINEERING DRAFTING & TECHNICAL CALCULATIONS (For Women)
Engineering Math., Elem.*
Fire Prevention & Protection Engineering (Ins.)
INDUSTRIAL ACCIDENT PREVENTION (Ins.)
Industrial Management I*, II* (Ins.)
Industrial Safety Engrg. (3 C.) (Ins.)*
JOB ANALYSIS FOR PREPARATION OF MANNING TABLES (Ins.)
Job Analysis for Preparation of Manning Tables (Ins.)
Management Accounting I
Marine Elec. Theory & Apparat. (Ins)*
Marine Steam Power Equipment
Materials, Statics & Elementary Strength of (Ins.)
Math. for Engineers, Advanced
Mechanics of Matls., Selected Topics in
Metallurgy, Practical
METEOROLOGY FOR AERONAUTICAL RES.(Ins)
(continued)

Stanford University (continued)

Personnel Management*
Personnel Mngmt., Advanced (Ins.)*
Precision Gaging & Inspection*
PRE-RADAR TRAINING (Ins.)
Priority & Allocation Procedures
QUALITY CONTROL IN INDUSTRY, APPLICATION OF STATISTICS TO (Ins)
Quality Control in Industry, application of Statistics to I, II (Ins.)
QUALITY CONTROL IN INDUSTRY, STATISTICAL ASPECTS OF
Radio, Fundamentals of I*, II
RADIO TRAINING (Ins.)
Reinforced Concrete Design
Ship Construction, Elem. of (Ins.)*
Shipbuilding for Supervisors, Problems of (Ins.)*
Stress Analysis, Elem. (Ins.)
Tanker Hull Design & Constructn. (Ins.)
Tanker Machinery, Equipment & Piping Layout (Ins.)
Timber Design, Elements of
Top-management Organ. & Control (Ins)*
Ultra-high Frequency Techniques
U. H. F. Techniques Laboratory
Vector & Tensor Analysis (Ins.)
Wartime Inland Transportation
Wartime Ocean Transport. (Ins.)
Welding Metallurgy (2 C.) (Ins.)

University of California, Berkeley (at over 20 centers in California)

Acctg. for Gov't Contracts (Ins.)
Acctg. for Managerial Personnel*
Acctg. in War Indus., Adv. (Ins.)
Acctg. Procedures for War Contracts
Aerodynamics (2 Courses) (Ins.)
Aerodynamics for Designers (Ins.)
Aircraft Analytical Geometry*
Airc. Descriptive Geometry (2 C.)*
Airc. Design, Intermediate (Ins.)
AIRCRAFT DRAFTING*
Aircraft Drafting (2 Courses)
Aircraft Drafting Standards*
Airc. Dynamic Loads & Fatigue (Ins.)
Aircraft Electrical Design (Ins.)
Airc. Engine Installation Design (Ins)
AIRCRAFT ENGINEERING DRAWING*
Aircraft Engineering Drawing
Airc. Hydraulic Systems & Equipment
Airc. Industry Administration (Ins.)*
Airc. Matls. & Parts Control (Ins.)*
Airc. Materials & Processes*
Airc. Materials & Processes - Non-ferrous (Inservice)*
Aircraft Mechanisms (Ins.)
Aircraft Power Plant Installations
Airc. Production Control I, II (Ins.)
Aircraft Repair Jigs & Fixtures, Design of (Ins.)
Aircraft Statistics
AIRCRAFT STRESS ANAL., ELEMENTARY
Aircraft Structural Analysis
AIRCRAFT STRUCTURES, INTRO. TO
Aircraft, Surface Treatment for (Ins)
Aircraft Weight Control (Ins.)
Antiaircraft Math. (Ins.)
Assembly Jig & Fix. Design (2 C.)*
Assem. Jig & Fix. Lab. Proc. (2 C.)*
Auditing War Contracts (Ins.)
Auditing for War Industries (Ins.)
Body Plan Interpret. for Template Layout (2 Courses)*
Carburetors & Ignition Systems (Ins.)
Chem. Engineering Problems in the Refining of Petroleum (Ins.)*
Chem. Laboratory Operations (Ins.)
Control of Operating Costs (Ins.)
Corrosion Prevention in the Process Industries (Ins.)*
Cost Acctg. for War Indus. (Ins.)*
Design Sketching, Aircraft
Detail Design
Die Design (3 Courses)*
Die Design Laboratory (Adv., Elem.)*
DIESEL ENGINE OPERATION, THEORY & PRACTICE (Ins.)
DIESEL ENGINEERING (Ins.)
DIESEL POWER PLANTS (Ins.)
Differential Equat. with Application (Ins.)
Electrical Engineering, Elem.
Electrical Equip. (2 Courses) (Ins.)
Electrical Equip., Application of (Ins.)
Electrical Equip., Maintenance of (Ins)
Electrical Machinery, Mainten. & Trouble Correction of
Electrical Mach. Laboratory (Ins.)
Electricity, Fundamentals of (Ins.)
ELECTRIC ACOUSTICS
ELECTROMAGNETISM, APPLIED (Ins.)
ENGINEERING DRAWING
ENGINEERING DRAWING I (Ins.)*
Engineering Drawing (2 Courses)*
ENGINEERING DRAWING & COMPUTATIONS* (continued)

University of California (continued)

Engineering Drawing & Computations
ENGINEERING, FUNDAMENTALS OF
Engineering Math. (3 C.) (Inservice)*
Engineering Mechanics & Heat, Fundamentals of (Inservice)
Engineering, Methods
Engineering, Methods (Applied) (Ins)
Executive Supervision & Control (Ins)
Experimental Engrg. Intro. to (Ins.)
Ferrous Metallurgy, Elem. of (Ins.)
Flight Engineering I (Inservice)
Flutter Prevention in Aircraft (Ins.)
Foreman Training (Inservice)
Foremen, Training Tech. for (Ins.)*
Fuels & Lubricants in Automotive Equipment, Application of (Ins.)
Fuels & Lubricants in Field Equipmt.
Fuels & Lubricants in War Industrs., Application of
Geometry for Lofting, Advanced
Geometry of Shipbuilding
Govt Contract Procedures (Ins.)
Heat Transfer in Aero. Equipment (Ins)
High Speed Diesel Engines (Inservice)
Hydrodynamics & Hull Design
Industrial Organization & Scientific Management (Inservice)*
Industrial Personnel Development (Ins)
Industrial Purchasing & Material Procurement (Inservice)*
Industrial Quantitative Analysis, Elementary (For Women)
Industrial Relations (Inservice)
Internal Combustion Engines (Ins.)
Internal Combust. Engine Performance & Design (Inservice)
Job Evaluation (Inservice)*
[illegible] ENGINEERING TRAINING
Labor Cost Control, Princ. Appl. of (Ins)
Lofting, Lines (2 Courses)*
Lubrication in Plant O. M., Appl. (Ins)
[illegible] Design, Fundamentals of (Ins.)
[illegible] Ship & Planing Design (4 C.)*
[illegible] Ship & Planing Laboratory Procedures (4 Courses)*
[illegible] Plants, Fabrication & Design of
[illegible] & Service, Design for
[illegible] Control, Methods for (Ins.)
[illegible] Operation Analysis
[illegible] (Inservice)
[illegible] Design*
Marine Drafting & Procs. Shipbuilding
[illegible] of Ship's Hull, I, II (Ins.)
[illegible] Lines, Layouts & Compts. (Ins.)
Marine Electricity for Shipyard Electricians (Inservice)
Marine Electricity for Supervisors & Job Instructors (Inservice)
Marine Refrigeration (Inservice)*
Marine Ventilation (Inservice)*
Materials, Advanced Mechanics of
Materials, Strength of (2 C.) (Ins.)
MATERIALS TESTING & INSPECTION
Math. for Aeronautical Engineers; Advanced Algebra (Inservice)
Math. for Aeronautical Engineers; Trigonometry (Inservice)
Math. for Adv. Machinists (Inservice)
Math. for Teachers (Correspondence)
Mechanical Perspective*
Mechanics, Analytical
Mechanics, Elements of
Mechanics & Strength of Materials, Elementary (Inservice)
Metallurgical Testg. & Inspection*
Metallurgy, Applied (Inservice)*
Methods, Non-destructive Testing of
Motion Study, Advanced (Inservice)
Office Organization & Management
Personnel Classification & Wage Determ.
Personnel & Employ. Psychology (Ins)
Personnel Management (Inservice)*
Personnel Probs. & Indus. Rel. (Ins)
Petroleum Prods., Inspn. & Test. of
PETROLEUM PRODUCTS, PHYSICAL TEST. OF
Petroleum Products, Chem. Analytical Methods in Testing
PETROLEUM PRODUCTS, TESTING OF (Women)
Petroleum Refining (Inservice)*
Physics for Teachers (Correspondence)
PLANE SURVEYING*
Plastic Forming of Metals, Effect of (Inservice)
Plastics & Synthetic Rubber
Plywood Aircraft Molding for Mass Production (Inservice)
Principles & Meth., Procurement (Ins)*
Production Control (2 C.) (Inservice)*
Production Design (2 C.) (Inservice)
Production Illustration*
Production Management (4 Courses)*
Production Planning & Control (Ins)*
Prod. Planning & Scheduling (Inservice)
Production Routing, & Dispatching, (Ins)
Production Shop Theory*
Sampling Theory & Its Application to Industrial Problems (Inservice)
(Continued)

University of California (continued)

RADIO COMMUNICATION (Inservice)
Radio Engineering (3 Courses)*
Radio, Fundamentals of I*, II*
Road & Airport Asphalt Paving
Safety Engineering (3 Courses)(Ins.)*
Scheduling & Production Control (Ins.)
Sheet Metal Fabrication & Assembly as Related to Design
Shipbuilding, Elements of
Shipbuilding Prodn. Illustration (Ins.)
Shipyard Electrical Equipment (Ins.)
Shipyard & Marine Electricity I (Ins.)
Shipyard Office Management
Shipyard Organization & Mngmt. (Ins.)
Shipyard Organization & Operation
Shipyard Scheduling & Control (Ins.)
Shipyard Warehousing & Invtn. Control*
Ship Production Management
Standards Department Admin. (Ins.)
Statistical Procedures, Adv. (Ins.)
STRESS ANALYSIS (Ins.)
Stress Analysis (2 C.) (Ins.)
STRESS ANALYSIS FOR DESIGNERS (Ins.)
Stores & Inventory Control(Ins)(Women)
Structural Design
Structural Detailing & Design (2 C.)*
Synthetic Rubber from Petroleum
Thin Plates & Shells (Inservice)
Thin Sheet Analysis (Inservice)
Time & Motion Study
Time Study, Advanced (Inservice)
Tool Design: Adv. Machine Jig & Fixture Laboratory (Inservice)
Tool Design: Assembly Jig & Fixture (20)
TOOL DESIGN, INTRO. TO I*, II* (Ins.)
Tool Design: Mach. Jig & Fixture(2 C.)*
TOOL DESIGN & TOOL PLANNING, INTRO. TO
Tool Design Sketching (Ins.)
Tool Engineering
Tool Planning (2 Courses)*
Tool Planning & Mfg. Engrg., Adv.*
Tool Planning & Production, Beginning
Tooling Materials & Processes, Science Backgrounds of (Ins.)*
Turbo-electric Propulsion Equip. (Ins.)
ULTRA-HIGH FREQUENCY RADIO
Ultra-High Frequency Techniques
U. H. F. Techniques: Laboratory
Unionmelt Welding, Theory & Prac. (Ins.)
Wartime Accounting Problems
Welding Instruction for Lead Men (Ins.)
Welding, Adv. Theory & Practice of(Ins)

University of Santa Clara, Santa Clara (Sunnyvale)

AIRCRAFT DRAFTING
Engineering Drawing
Engineering Mathematics (Ins.)
Industrial Cost Accounting (Ins.)
Industrial Office Management, Techniques of (Ins.)
Industrial Safety Engrg., Adv. (Ins.)
Materials Inspection & Testing
Radio, Fundamentals of I
Steam Turbines
Structural Design
Supervision & Personnelship (Ins.)
Transportation & Traffic Management

University of Southern California, Los Angeles (Downey, Inglewood, North Hollywood, Pomona, San Pedro, Whittier, Wilmington)

Aerial Photographs, Interpretation of
Air Conditioning, Advanced
Aircraft Descriptive Geometry
Aircraft Design, Elements of
Aircraft Die Casting Design (Ins.)
Aero. Draftsman, Stress Anal. for (Ins)
Aircraft Electrical Design
Aircraft Fabrication Methods (Ins.)
Aircraft Hydraulic Mechanisms (Ins.)
Aircraft Industry, Adv. Technical Illustration for (Ins.)
Aircraft Instruments (3 Courses)
Aircraft Materials & Processes
Aircraft Production Methods of Scheduling (Ins.)
Aircraft Production Design II (Ins.)
Aircraft Production Illustration
Aircraft Warehs. Meth. for (Ins.)
Aero. Workers, Mechanical Drawing for
Airframe Manufacturing Management
Airport Management
Aero Structures, Industrial Appl. of
AUTO AIRCRAFT INSTRUMENTS*
Bacteriology for Sanitary Engrs. I, II
Building Sanitation Engineering
Butadiene, Chemistry & Technology of
Carbide Engineering
Chemical Engineering, Elem. of (Ins.)
Chemical Engrg. Calculations (Ins.)
(continued)

University of Southern California (continued)

Chemical Engrg. Operations Lab. (Ins.)
Chemistry of Engineering Materials
Conveyers, Their Appl. & Design (Ins.)
Cost Analysis for War Industries
Elastic Stability, Theory of
Elasticity, Theory of
Electric Motors, Indus. Appl. of
Electric Power System Analysis (Ins.)
Electrical Engineering (2 Courses)
Electrical Engineering Laboratory
Electrical Equip., Insp. & Test. of
Electrical Installn., Mainten. & Operation I, II
Employee Evaluation (Inservice)
ENGINEERING, BASIC*
Engineering Drawing I, II, III
Engineering Math. (3 Courses) (Ins.)
Engineering Physics II A, B
Engineering Physics: Mechanics & Heat
Engineering Trigonometry (Inservice)
Extractive Metallurgy of Critical Metals I, II
Extractive Metallurgy of Strategic Metals
Food Technology (Inservice)
Foremanship, Fundamentals of (Ins.)
Fotemanship Training
Fuels & Lubricants for Internal Combustion Engines
Govt. Contract Proc. & Acctg. (Ins.)
Hole Investing, Principles
Highway Engineering
Hydraulics
Industrial Electrical Control
Industrial Electronics
Industrial Engineering Sanitation
Industrial Gas Analysis
Industrial Management (M.E.)(Ins.)
Industrial Organization & Scientific Management (Inservice)*
Industrial Plant Protection (Ins.)
Industrial Psychology (Inservice)
Industrial Quantitative Analysis
Industrial Refrigeration (Inservice)
Industrial Safety Engineering
Industrial Statistics
Industrial Temperature Measurement & Control (Inservice)
Industrial Traffic Management
Internal Combustion Engine Testing
Job Analysis, Job Evaluation & Merit Determination
Labor Legislation & Coll. Barg. (Ins.)
Lubricants & Lubrication (Ins.)
MACHINE TOOLS & REPLACEMENT SCHED (Ins.)
Manufacturing Accounting
Map Drafting, Elementary
Marine Electrical Design
Marine Electrical Engrg. (2 Courses)
Materials Inspectn. & Testing (Ins.)
Mathematics of Machine Tooling (Ins.)
Mechanics, Applied
Mechanics & Strength of Matls, Applied
Metallography, Advanced
Metallurgy & Metallography
Methods Improvement
Natural Gas, Compression, Transmissn. & Distribution of
Natural Gas Plant & Field Practices
Natural Gas & Substitute Fuels, Utilization of
Natural Gas, Transmission & Meas. of
Non-destructive Inspn. of Matls. (3 C)
Occupational Testing (Inservice)
OXIMATION INSPECTION (Inservice)
Paints, Varnishes & Lacquers
Personnel Adjustment (Inservice)
Personnel & Labor Relations (Ins.)*
Personnel Selection & Placement (Ins.)
Petroleum Map Drafting
Petroleum Refinery Unit Processes
Petroleum Technology
Petroleum Testing Methods
Photogrammetry (Inservice)
Piping Layout & Drafting*
Plastics
Position Class. & Compensation (Ins.)
Precision Parts Inspection
Priorities & Allocations (Inservice)
Production Control
Production Illustration
Production Planning & Coordination, Adv. (Inservice)
Purchasing & Materials Control
Radio Electricity, Elementary
Radio Engineering I, II
Radio Fundamentals of I, II
Radio Laboratory
Reinforced Concrete I, II
Rubber & Its Subs., Indus. Uses of
Rubber Technology
Ship Design Stress Analysis (Ins.)
Shipyard Production Planning
Strength of Materials
Structures

(continued)

University of Southern California (continued)

Structural Analysis, Advanced I
Supervision & Management (Inservice)
Surveying (2 Courses)
Telephone Engineering
Textile Engineering II, III
Time & Motion Study (2 C.) (Ins.)
Tool & Die Design (Inservice)
Tool & Gages Inspection Problems
Topographic & Cadastral Drafting
Transportation Rates & Routing (Ins.)
Ultra-high Frequency Radio (Ins.)
Vitamin Assaying, Practical
War Industries, Scheduling for
WAR PRODUCTION MANAGEMENT
X-ray Diffraction, Indus. Appl. of

COLORADO

Colorado School of Mines, Golden (Denver, Pueblo)

Aircraft & Ship Lofting*
Aircraft & Ship Template Layout
Combustion Application
Defense Materials, Anal. Methods for
Engineering Drawing, Elem. (Women)
Metallurgy, Advanced
Metallurgy of Iron & Steel
Physical Metallurgy & Metallography Laboratory
Reinforced Concrete Theory & Design
Use of Spectrograph in Defense Industries*

Colorado State College of A. & M. Arts, Fort Collins (Durango, Eaton, Greeley, Hesperus, Windsor)

Engineering, Chemical
Engineering, Chemical Warfare*
Engineering, Communications (2 C.)*
Engineering Drawing*
Engineering, Inspection
Mathematics for Teachers
Surveying

University of Colorado, Boulder (Colorado Springs, Denver, Longmont, Loveland, Pueblo, Trinidad, Walsenburg)

Aircraft Drafting & Stress Analysis
Airplane Design, Introduction to
Analytical Chemistry - Refresher Course
Calculus I, II
Calculus (2 Courses) (Inservice)
Cartridge Brass, Processing of (Ins.)
Chemical Plant Operation*
Chemical Plant Operation, Adv. (Ins.)
Electrical Instruments, Theory & Design of II
Engineering Drafting
ENGINEERING DRAFTING FOR WOMEN
Engineering Drawing
Engineering Drawing & Elementary Machine Design I*, II*
ENGINEERING FUNDAMENTALS
Engineering Mechanics, Applied (Ins)
Government Defense Contracts Procurement & Procedure
Industrial Accounting
Industrial Cost Accounting I, II
Industrial Engineering for Women In
Industrial Instruments for Measurement & Control
Industrial Labor Problems (Inservice)
Industrial Management: Control & Planning of Production Operations
Industrial Management: Oper. Anal.
Industrial Organization & Management
Industrial Psychology
Industrial Safety (2 C.) (Inservice)*
Machine Drawing & Design I, II
Mathematics, First Year I*, II
Math. for Electrical Engrg. (Ins.)
Personnel Mngmt., Psychology of (Ins)*
Physics, Teachers' Training Course in
Production & Quality Control, Use of Statistics in (Inservice)
Quartz Crystal Production
Radio I, II*, III
RADIO COMMUNICATIONS (Pre-radar)(Ins.)
Safety Engineering (Inservice)
Stat. of Prodn., Intro. to (Inservice)
Timber Engineering, Modern
Time & Motion Study (Inservice)
Ultra-High Freq. Techniques III
WOMEN SUPERVISORS OF INSPECTION, SUPERVISION FOR (Inservice)

University of Denver, Denver (Brighton, Fort Lupton)

Accounting Techniques & Procedures
Chemical Laboratory Techniques
Chemical Plant Operations*
Chemical Plant Operations (Short C.)
Differential Equations, Applied
Electrical Equipment, Theory, Selection & Operation of (Ins.)
Engineering Drafting, Elementary
Engineering Drawing, Advanced
ENGINEERING FUNDAMENTALS
Engineering Fundamentals
Engineering Mathematics (3 Courses)
Engineering Office Practice
Engineering, Radio Communication (2 C)
Engineering, Sanitary
Engrg. Testing by the Photoelastic Methods (Inservice)
Industrial Office Management
Industrial Personnel Relations
Industrial Statistics
Industry, Mathematics for
Physical Chemistry for Engrg. Prodn.
Power Plant Engrg. Practice (Ins.)
Production Cost Accounting
Supervisors, Indus. Organ. & Mngmt for
Surveying - Short Course (2 Courses)
Traffic Management
War Materials, Test. & Anal. of

CONNECTICUT

University of Connecticut, Storrs (Hartford, New Britain, New London, Torrington

Aerial Bombardment Protection (Ins.
Drafting, Advanced (Inservice)
Drafting & Blueprint Interpretation, Basic (Inservice)
Drafting, Checking & Layout (Ins.)
Drafting Room Practice
Electro-plating Prin. & Tech. (Ins.)
ENGINEERING, ELEMENTS OF
ENGINEERING DRAFTING FOR DETAIL DRAFTSMEN, INTENSIFIED (Inservice)
ENGINEERING DRAFTING FOR LAYOUT MEN & CHECKERS, INTENSIFIED (Inservice)
Engineering Drawing (Inservice)
Engineering Drawing (For Women)
ENGINEERING DRAWING & ANALYSIS
Engineering Drawing & Blueprint Read.
Engineering Drawing, Mechanical
Engineering Mathematics (3 C.) (Ins.)
Engineering Physics (Inservice)
Foremanship & Supervision (Inservice)
Industrial Accident Control (Ins.)
Industrial Chemistry
Industrial Electricity, Electrical Instruments & Testing (2C.) (Ins.)
Industrial Foremanship (Ins.)
INDUSTRIAL INSPECTION (Ins.)
Industrial Inspection, Bases of
Industrial Management
Industrial Metallurgy*
Industrial Personnel Management, Seminar in Current Prob. of (Ins.)
Industrial Radiography (Inservice)
Industrial Safety Engineering (Ins.)
Industrial Supervision (Inservice)
Industrial Time & Motion Analysis
Jig & Fixture Design (Inservice)
Mathematics, Applied (Inservice)
Mechanics, Applied (Inservice)
Metals Protection (Inservice)
Metallurgical Chemistry (Inservice)
Metallurgy, Principles of (Inservice)
Motion Economy (Inservice)
Oper. & Product. Supervision (Ins.)
Operation Sheet Writing (Inservice)
ORDNANCE INSPECTION (Inservice)
Personnel Management (Inservice)
Production Control (Inservice)
Production Supervision (Inservice)
Punch & Die Design
Radio Tech. Training, (Inten.) I, II
Sheet Metal Draft. Intensive (2 C)(Ins)
Time & Motion Study (Inservice)
Steel, Heat Treatment of (Inservice)
Tool Engineering
Ultra-high Frequency Techniques
Welding & Welding Supervision, Scientific Bases of (Inservice)

Yale University, New Haven (Bridgeport, Greenwich, Meriden, Naugatuck, Stamford, Wallingford, Waterbury)

Aircraft Woods, Inspection of (Ins.)
Cost Accounting for War Prodn. (Ins.)
Cost Control (Inservice)
Drafting (Adv., Elem.) (Inservice)*
(continued)

Yale University (continued)

Drafting as Applied to Airplane Bodies (Inservice)
ENGINEERING AIDS (For Women)
Engineering Drawing (Inservice)
Engineering, Methods (Inservice)
Fuels & Their Economical Use
Industrial Chemistry (Inservice)
Industrial Electricity (Inservice)*
Industrial Heat Processes in Manufacturing (Inservice)
Industrial Safety (Inservice)*
Industrial Supervisn. (2 C.) (Ins)*
Inspection, Technical (Ins.)*
Machine Detailing (Inservice)
Machine Maintenance (Inservice)*
Materials Procurement & Control (Ins.)
Mathematics, Applied (Ins.)*
Mathematics for Indus. Elec. (Ins.)
Metallurgy, Principles of (Ins.)*
Metallurgy of Iron & Steel: Heat Treatment (Inservice)*
Metals, Surface Treatment of (Ins.)
Motion Economy & Methods (Ins.)
Motion & Time Study (2 C.) (Ins.)*
Personnel Supervision (Adv., Elem)(Ins)*
Production Control (Adv., Elem)(Ins)*
Production Planning (Inservice)*
Quality Control (Inservice)
Radio Communications I (Inservice)*
Radio, Fundamentals of I*, II*
Tool Design (4 Courses) (Ins.)*
Tool Steels, Heat Treatment of (Ins.)
Transport. & Traffic Control (Ins.)

DELAWARE

University of Delaware, Newark (Dover, Wilmington)

Alternating Currents
Chemical Engrg. Calculations A (Ins.)
Chemistry & Chemical Technology (For Negroes)
Chemistry of Powder & Explosives (Ins)
Direct Currents (Inservice)
Electrical Machinery
Industrial Accounting I (Inservice)
Industrial Cost Accounting II (Ins.)
Industrial Personnel Management. (Ins)
Motion & Time Analysis
Safety in Industry (2 C.) (Inservice)
Welding Engineering (Inservice)

DISTRICT OF COLUMBIA

Catholic University of America, Washington, D. C.

Business Administration & Management
Electrical Machinery & Circuits
Electronics, Fundamental (Ins.)
Engineering Drawing
Engineering Fund. (Jr. Engr. Supp.)
Foremanship, Advanced (Inservice)
Foremanship Training (Inservice)
Industrial Personnel Administration
Inspection of Ordnance Materials
Machine Design, Intermediate (Ins.)
Management Problems in Wartime
Materials Testing (Inservice)
MATH. FOR HIGH SCHOOL TEACHERS
Mechanics & Math., Elem. (Inservice)
Metallurgy of Iron & Steel (Ins.)
Ordnance Machine Design, Elem.
Properties of War Metals & Plastics (Ordnance Materials) (Inservice)
Strength of Matls. & Matls. Testing
Structures (2 Courses)
Traffic Management (Inservice)

George Washington University, Washington, D. C.

Air Conditioning, Advanced (Inservice)
Air Condition., Heating, Ventilating & Elements of (Inservice)
Building Construction & Supvn. (Ins.)
Cartography
Circuit Anal. by Operational Methods
Combustion Engines (Inservice)
Construction Materials, Properties Testing & Specifications of
Construction, Timber
Contracts, Specifications & Engineering Relations
Electrical Engrg. (Introduction)
(continued)

George Washington University (continued)

Electrical Engineering Review (Ins.)
Elec. Motor Appl. & Control (Ins.)
Engineering Drafting, General
Engineering Fundamentals (Women)
Engineering Mathematics (2 C.) (Ins.)
Engineering War Metals, Inspn. of (Ins.)
Fire Prevention Engineering
Industrial Safety Engrg., Fund. of (Ins.)
Instruments for Engineering Test: Development & Research (Ins.)
Map Making & Interpretation
Mapping with Aerial Photographs
Math. for Engrg. Computations (Ins.)
Optics, Applied (Inservice)
Photogrammetry (Inservice)
Plane Table Topography (Inservice)
Propellants & High Explosives (Ins.)
Radio Communication (3 C.) (Ins.)
Radio, Fundamentals of (Ins.)
Radio, Principles of I
Reinforced Concrete Design (2 C.) (Ins.)
Sanitary Engineering, Elem. of (Ins.)
Ship Construction (Inservice)
Stress Anal. by Moment Distribution (Ins)
Structural Design-detail, Elem.
Tool Engineering
Topographic Drafting (Inservice)
Water Supply, Sewerage & Camp San. (Ins)
Welding Design, General (Inservice)

Howard University, Washington, D. C.

Electrical Circuits & Machinery, Elem.
Electric Power Machinery & Equipment
ENGINEERING DRAWING
Engineering Metallurgy
Engineering Physics
Ferrous & Non-ferrous Alloys, Anal. of
Geodetic Computer
Industrial Accounting
Machine Design, Elements of
Organic Analysis: Qualitative
Physico-chemical Methods of Instrumental Analysis
Qualitative Chemistry
Quantitative Analysis for Defense Technicians & Technical Aids
Surveying & Mapping
TOOL ENGINEERING
WAR TRAINING PROGRAM FOR JR. PHYSICISTS & PHYSICS TEACHERS

FLORIDA

University of Florida, Gainesville (Jacksonville, Miami, Orlando, Pensacola, St. Petersburg, Tallahassee, Tampa, West Palm Beach)

Chemical Engineering Production
Differential Calculus & Its Application to Engineering Problems (Ins.)
ENGINEERING, BASIC II (Women)
ENGINEERING AID (Radio) (Ins.) (Women)
Engineering Drawing (Adv., Elem.)*
Engineering Fundamentals I
Industrial Mechanics
Industrial Safety Engineering (Ins.)
Mathematics, Applied
Mathematics for High School Teachers*
Mathematics for High School Teachers (Correspondence Course)
Mold Loft Procedure & Layoff I*, II*
Physics for High School Teachers*
Physics for High School Teachers (Correspondence Course)
RADIO COMMUNICATION (Pre-radar) (Ins.)
Radio, Fundamentals of I*, II*
Surveying, Elementary

GEORGIA

Atlanta University, Atlanta

Cost Accounting
Industrial Work, Analytical Chemistry for
Organic Chemistry, Basic Prin. of

Georgia School of Technology, Atlanta (Augusta, Columbus, Fort Valley, La Grange, Macon, Rome, Savannah, Thomaston, Toccoa, Valdosta)

Chemistry of Powder & Explosives B
Combustion Engineering, Elem. (Ins.)
Construction Materials, Testing & Inspection of (continued)

Georgia School of Technology (continued)

Cost Accounting
Drawing Analysis & Estimating
Electrical Engineering, Elementary
Engineering, Automotive
Engineering Drawing (2 Courses)*
Engineering Drawing (Inservice)
ENGINEERING FUNDAMENTALS
INDUSTRIAL ACCIDENT PREVENTION ENGRG.
Industrial Analytical Chemistry
Industrial Chemical Analysis
Industrial Safety Engineering (Ins.)*
Instrumental Methods of Analysis
Math. for High School Teachers
Motion & Time Study
ORDNANCE INSPECTION (Inservice)
Personnel & Indus. Psychology (Ins)
Physical Chemistry, Survey of
POWER PLANT ENGINEERING, ELEM. (Ins)
Production Engineering (Inservice)
Production Illustration
Production Supervision
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio, Fundamentals of I (For Negroes)
Radio, Fundamentals of I*, II*
Structural Design
Textile Production Supervision, Adv.
Textile Test. & Inspection (Ins.)
Ultra-high Frequency Techniques

IDAHO

University of Idaho, Moscow (Boise, Lewiston, Nampa, Twin Falls)

Radio, Fundamentals of I*, II*

ILLINOIS

Bradley Polytechnic Institute, Peoria (Canton, Pekin)

Analytical Chemical Techs. (Women)
Chemistry for Industrial Workers
Cost Accounting (Inservice)
Engineering Drawing
Engineering Mathematics (Inservice)
Glass Blowing
Industrial Organn. & Scientific Mngmt.
Industrial Psychology
Industrial Safety Engineering*
Math. for Engineers, Advanced
Mechanics, Applied
Motion & Time Study
Personnel & Indus. Relations (Ins.)
Strength of Materials

Central Y. M. C. A. College, Chicago

Accounting, Auditing, & Investigations, Advanced
Chemical Laboratory Techniques, Training for (2 Courses)
Foremanship Training
How to Interview
Industrial Accounting Including Payroll Procedures
Industrial Purchasing (Inservice)
Industrl. Purchas. & Traff. Mngmt(Ins)
Industrial Statistics
Industrial Transportation & Traffic Management (Inservice)
Job & Merit Rating
Manufact., Cost Acctg. for (Inservice)
Personnel Administration

De Paul University, Chicago

ANALYTICAL CHEMISTRY
BUSINESS ORGANIZATION
Business Organization (Inservice)
Chemical Laboratory Techniques I, II
COST & BUDGET ACCOUNTING
Cost & Budget Accounting
Indus. Cost Accounting Procedures
Industrial Management in Material Conservation, Problems in (Ins.)
Industrial Payroll Accounting (Ins)
Industrial Psychology (Inservice)
Industrial Statistics
INDUSTRIAL STATISTICAL METHODS
Industrial Statistical Methods
(continued)

De Paul University (continued)

Industrial Supervision (Inservice)
Industrial Supervision for Women
Inventories, Control & Val. of (Ins.)
Job Analysis (Ins.)
Labor Legislation & Indus. Rel. (Ins.)
ORGANIC CHEMISTRY, FUNDAMENTALS OF
Personnel Management, Advanced
PERSONNEL MANAGEMENT, INDUSTRIAL
Personnel Management, Industrial (Ins.)
PRODUCTION CONTROL
Production Control (Ins.)
Production Planning (Adv. Production Control) (Ins.)
Radio, Fundamentals of I, II
War Industry Contracts (Ins.)

Illinois Institute of Technology, Chicago (Bellwood, Chicago Heights, Cicero, Harvey, Maywood, North Chicago, Waukegan, Wheaton)

Aeronautics for Airc. Workers, Prin. of
Airplane Engines
Airplane Engine Power Measurements
Chemical Engineering, Elements of
Die Design
Diesel Engines
Drafting for Women
Electric Motors & Control in Industry (2 Courses) (Ins.)
Electrical Engineering - A. C. (Elem.)
Electrical Engineering - D. C. (Elem.)
Electronics & Intro. to Microwave, Adv.
ELECTRONICS & ULTRA-HIGH FREQUENCY TECHNIQUES, ADV. (Ins.)
ENGINEERING FUNDAMENTALS
Explosives
EXPLOSIVES EMGRG., INTRO. TO (Ins.)
EXPLOSIVES SAFETY ENGINEERING (Ins.)
Heat Treatment (Ins.)
Industrial Chemical Analysis
INDUSTRIAL CHEMISTRY FOR WOMEN
INDUSTRIAL DRAFTING FOR WOMEN
INDUSTRIAL ENGINEERING, FUND. OF
Industrial Mngmt. for Foremen (Ins.)*
Industrial Personnel Problems (Ins.)
Industrial Safety Engineering (Ins.)*
Industrial X-rays (Ins.)
Inspection Mathematics (Ins.)*
Inspection Methods
Machine Design, Elementary
Machine Design, Elem. of (Women)
Manufacturing Processes (Ins.)
Materials Testing
Mechanical Drawing
Measurements & Electronics, Adv.
Metallography (Ins.)
Metallurgy
Metallurgy & Metallography, Elem. of
Metallurgy of Steel (Ins.)
METALLURGICAL TECHNIQUES FOR WOMEN
Military Map Making
Naval Ordnance Inspection (Ins.)
ORDNANCE INSPECTION (Ins.)
Organic Chemistry (Ins.)
Personnel Selection & Training (Ins.)
Photogrammetry
PLANT PROTECTION ENGINEERING (Ins.)
Plastics
Powder Metallurgy
Power Systems Engineering
Production Inspection
Production Methods
Production Problems, Advanced
Radio, Introduction to
Radio Mathematics I, II
Radio Measurements (2 Courses)
RADIO MEASUREMENTS & ELECTRONICS (Ins.)
Radio Practice, Modern
SAFETY ENGINEERING FOR THE SERVICES OF SUPPLY (Ins.)
Strength of Materials, Intro. to (Ins.)
Synthetic Rubber
Time & Motion Study (2 C.) (Ins.)
Tool Design
Tool Inspection (Ins.)
Topographic Map Drafting
Ultra-high Frequency Techniques I, II
Welding Engineering
Welds, Inspection of

Northwestern University, Evanston

Aircraft Engines
Airplane Stress Analysis
Army Signal Corps Instructors' Course
Chemical Engineering Principles, Intro.
Combustion Engines, Elementary
Drafting, Engineering
Drafting, Machine
Drafting, Ship
Engineers, Cost Estimating for
Industrial Cost Accounting
INDUSTRIAL ENGINEERING, FUND. OF
Industrial X-rays (Ins.)
Job Analysis
(continued)

Northwestern University (continued)

Machine Design, Elementary
Math. for Instructors I, II, III, IV, V
Metallography of Iron & Steel
Metallurgy of Alloy Steels
Metallurgy of Iron & Steel
Metallurgy & Metallography of Iron & Steel
Naval Architecture
Piping & Duct Design
Plane Trigonometry
Plastics, Chem. & Physical Prop. of
Plastics Engineering, Elementary
Plastics Production & Fabrication
Precision Gaging & Inspection
Production Processes
Production Tooling & Design
Radio, Fundamentals of I
Radio Theory, Advanced
RADIO & ULTRA-HIGH FREQUENCY CIRCUITS & TECHNIQUES
Sanitation & Water Supply
Ship Calculations
Solid Geom. & Spherical Trigonometry
Spectroscopy, Industrial
Steam & Diesel Power
Structural Design
Supervision, Elements of (Ins.)

University of Chicago, Chicago

Geometrical Optics & Optical Design
Math. for Teachers (Corres.)
OFFICE SUPERVISION (Women)
Optical Shop Work
Physics for Teachers (Corres.)
PRE-ELECTRONIC INSTRUCTOR TRAINING FOR WOMEN
PRODUCTION SUPERVISION
PRODUCTION TRAINING FOR WAR INDUS.
RADIO COURSE SUPERVISORS' TRAINING FOR SIGNAL CORPS
RADIO, ELECTRONICS & MICROWAVES, ADVANCED I, II (Ins.)
Statistical Meth., Survey of (Ins.)

University of Illinois, Urbana (At approximately 50 centers in Illinois)

A. C. & D. C. Machines*
Aerial Bombardment Protection
Aircraft Production Processes (Ins.)*
Alloying Elem. in Steel, Func. of (Ins)
Cost Stands. for Indus. Control (Ins.)*
DIESEL ENGINE OPERATION, THEORY & PRACTICE (U. S. NAVY)
Electrical Circuits (Ins.)*
Electrical Engineering, Elem. of*
Electronic Indus. Control Devices (Ins)
ENGRG. AIDS (Aire. Radio) (Signal Corps)
Engrg. Chemistry: Analytical (Ins.)*
Engrg. Chemistry: Inorganic (Ins.)*
Engrg. Chemistry: Organic (Ins.)*
Engineering Drafting I*, IV*
Engineering, Foundations of (Ins.)*
Engineering Mathematics (Ins.)*
Explosives*
Foundry Sand Control*
Heat Treatment of Alloy Steels*
Heat Treatment of Plain Carbon Steels*
Highway Engrg., Principles of*
Indeterminate Structures*
Industrial Accounting (Ins.)*
Industrial Cost Accounting (Ins.)*
Industrial Electrical Measuring & Control Instruments*
Industrial Electronic Control Devices
Industrial Fuel Combustion*
Industrial Statistics*
Industrial Strength of Materials*
Industrial Supervision for Prospective Foremen (Ins.)*
Internal Combustion Engines
Labor Relations (Ins.)
Machine Design, Elem. I*, II*
Map Drafting*
Metallurgy of Iron & Steel*
Military Map Making (Women)*
Office Management (Ins.)*
Personnel & Industrial Relations*
Plane Surveying*
Pre-foreman Train. for Prodn. Supvn.*
Production Engineering (Ins.)*
Production Illustration (Ins.)*
Projective Draw., Theory of (Ins.)
Radio, Fundamentals of I*, II*
Radio, Fundamentals of I (Women)
Reinforced Concrete Design, Theory & Practice of*
Safety Engineering (Ins.)*
Sanitary Engrg. for Emergencies*
Stress Analysis, Elementary*

(continued)

University of Illinois (continued)

Structural Design in Steel, Theory & practice*
Supervisory Training (Inservice)*
Theory & Applied Mechanics*
Time & Motion Study*
Tool Design, Elementary*
ULTRA-HIGH FREQUENCY TECHNIQUES
WARTIME TESTING & RESEARCH WITH X-RAYS, TECHNIQUES OF

Wheaton College, Wheaton

Business Organization (Inservice)
Chem. for Lab. Technicians, Gen.
Cost Acctg. for War Production
Government Contracts
Industrial Management for Foremen (Ins)
Inorganic Chemistry for Lab. Tech.
Office Supervision
Organic Chem., Basic & Applied
Personnel Management
Personnel Select. & Training (Ins.)
Production Management
Radio, Fundamentals of I, II
Statistical Methods

INDIANA

Butler University, Indianapolis

Cost Accounting, Industrial
Cost Accounting, Standard
Factory Management
Managerial Accounting

Indiana University, Bloomington (At approximately 40 centers in Indiana)

Accounting, Intermediate I (Ins.)*
Accounts. for Inventory & Industr. Labor Control (Inservice)
Cost Accounting, Elemt. of (Inservice)*
Effective Foremanship, Elem. of (Ins)
Gov't Contract Procedure & Acctg.
Industrial Acctg., Fund. of (Ins.)*
Industrial Psychology (Inservice)
Industrial Relations, Prob. in (Ins)
Office Management I, II (Inservice)
Personnel Admin., Prob. in (Ins.)*
Personnel Management, Tech. of (Ins)*
Process & Standard Costs (Ins.)*
Production Management & Control
Social Sec. & Payroll Acctg. (Ins.)*
Stat. Methods Applied to Industry

Purdue University, Lafayette (At approximately 50 centers in Indiana)

Accelerated Mathematics Program, Teachers' Training Course for (Ins.)
Accelerated Physics Program, Teachers' Training Course for (Inservice)
Aerodynamics, Fundamentals of (Ins.)
Aircraft Drafts. & Inspn. Proc. (Ins.)
Aircraft Engines, Intro. to (Ins.)
Airplane Construction, Principles & Practice I*, II (Inservice)
Blast Furnace, Metallurgy (Inservice)
Boiler Feed Water Conditioning (Ins.)
Chemical Engineering for Prod. Supvn.*
Chemical Industrial Microbiology (Ins)
Die Design (Inservice)*
DIESEL ENGINE OPERATION, THEORY & PRACTICE OF (Inservice)
Distillation Processes (Inservice)
Drainage Practices (Inservice)
Electrical Design (Inservice)
Electrical Engrg. - A. C. (Ins.)*
Electrical Engineering - D. C. (Ins)*
Electrical Measurements (Inservice)*
Electrometallurgy (Inservice)*
Engrg. Chemistry, Fund. of (Ins.)
Engineering Draft. I, II (Inservice)*
Engineering Fundamentals II (Ins.)*
ENGINEERING FUNDAMENTALS FOR ENGINEERING AIDES (Signal Corps)
Engineering Material Inspectors, Chemistry for (Inservice)
Engrg. Mtls. & Processes (Inservice)*
Engineering Math. II (Inservice)*
Engineering Math. for Electrical Engineering, Applied (Inservice)*
Engineering Math. for Mech. Ind.(Ins)*
Engineering Math. for Machine Tools II, III*

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Purdue University (continued)

Engineering Organic Chemistry (Ins.)*
Engineering Physics (Inservice)*
Engineers, Mathematical Anal. for (Ins)
Ferrous Metals, Analysis of (Ins.)*
Gage Design (Ins.)
Gear Fund. & Practical Problems*
Grinding Theory, Fund. of (Ins.)*
Heat Engineering for Internal Combustion Engines, Elem. (Ins.)*
Heat Engineering for Steam Power Plants (Ins.)*
Heating & Ventilation, Elem. (Ins.)
Highway & Airport Engineering, Modern Field Problems in (Ins.)
Industrial Analytical Chemistry (Ins.)
INDUSTRIAL DRAFTING FOR WOMEN
Industrial Electronics I*, II* (Ins.)
Industrial Engrg., Fund. of (Ins.)*
Industrial Engineers, Manufacturing Cost Control for (Ins.)*
Industrial Ferrous Alloys (Ins.)*
Industrial Instruments for Measurement & Control II (Ins.)*
Industrial Lubrication (Ins.)
Industrial Non-ferrous Alloys (Ins.)
Industrial Radio Engineering (Ins.)
Industrial Safety (2 C.) (Ins.)*
Jig & Fixture Design (Ins.)*
Lubrication Fundamentals (Ins.)*
Machine Design (Ins.)*
Mechanics, Applied: Statics (Ins.)
Mechanics, Applied: Strength of Materials (Ins.)*
Metals, Corrosion of (Ins.)
Metals, Inspection of (Ins.)*
Metals, Protective Coating on (Ins.)
Metallographic Lab. Practice (Ins.)*
Metallurgy, Elementary (Ins.)*
Metallurgy, Foundry (Ins.)*
Metallurgy, Physical (3 C.) (Ins.)*
Metallurgy, Production (Elem.) (Ins.)*
Metallurgy of Aluminum (Ins.)*
Metallurgy Appl. to Mach. Tools (Ins.)*
Metallurgy of Flat Rolled Prod. (Ins.)*
Metallurgy of Iron & Steel (Ins.)*
Metallurgy of Magnesium (Ins.)
Metallurgy of Welding (Ins.)
Open Hearth Metallurgy, Adv. (Ins.)*
Open Hearth Practice (Ins.)*
Optics, Principles of (Ins.)
ORDNANCE INSPECTION (Ins.)
Petroleum Refining (Ins.)
Plastics in Construction (Ins.)
Powder Manufacture, Chem. Prob. in (Ins)
Power Generation (Ins.)
Power Plant Testing (Ins.)*
Power Transmission & Distribution (Ins.)
Precision Meas. in Mach. Indus. (Ins.)*
Production Control (Ins.)
Production Engineering I*, II* (Ins.)
Production & Maintenance Prob. (Ins.)*
Propeller Construction, Fund. of (Ins.)
Pyrometry (Ins.)*
Radio Engineering (3 C.) (Ins.)*
Radio, Fundamentals of I*, II* (Ins.)
Ship Construction, Surveying for (Ins.)
Ship Fitting, Principles of (Ins.)*
Spectroscopy, Applied (Ins.)*
Steam Power Plant Equipment (Ins.)*
Stresses (Ins.)
Structural Design (Ins.)
Structural Drafting (Ins.)
Structures (2 Courses) (Ins.)
Time & Motion Study (2 C.) (Ins.)*
Topographic Map Making (Ins.)
Ultra-high Frequency Techniques
Wood Aircraft Fabrication & Assembly Principles (Ins.)
Work Simplification, Intro. to (Ins.)*
X-rays, Applied (Ins.)*

Rose Polytechnic Institute, Terre Haute (Indianapolis, Linton)

Chemistry, Analytical
Chemistry of Powder & Explosives ..., B
Engineering - ... C.
Engineering Chemistry
Engineering - D. C.
Engineering Drawing*
Engineering Fundamentals
Engineering Mathematics (Ins.)
Engineering, Power Plant (Ins.)
Engineering, Production (Ins.)
Engineering, Safety (Ins.)
Field Inspection & Surveying
Internal Combustion Engines (Ins.)
Materials Testing & Inspection
Metallography
Radio, Fundamentals of I, II
Time & Motion Study (Ins.)

University of Notre Dame

Aeronautics, General (Inservice)
Airc. Engines: Prodn. Testing(Ins)
Airc. Stress Anal., Elem. of (Ins.)
Chemistry, Elem. of (Inservice)
Cost Accounting, Adv. (Inservice)
Electric Motors & Control (Ins.)
Engineering Drawing (2 C.) (Ins.)
Foremanship (Inservice)
Industrial Accounting I, II (Ins.)
Industrial Cost Accounting (Ins.)
Industrial Management
Industrial Mathematics (Inservice)
Industrial Safety (Inservice)
Materials Testing (Inservice)
Metallurgy, Physical; Lectures (Ins)
Motion & Time Study
Motion & Time Study (Ins.) (Women)
Organic Chemistry, Elem. of (Ins.)
Personnel & Industrial Relations
Production Engineering & Control
Qualitative Organic Chemistry
Reinforced Concrete Design (Ins.)
Strength of Materials (Inservice)
Tool & Die Design (Inservice)
Work Simplification (Inservice)

IOWA

Drake University, Des Moines

Budgetary Control (Inservice)
College Algebra
Personnel Management
Physics, Heat & Mechanics, Elem.
Supervision, Techniques of (Ins.)

Iowa State College, Ames (Cedar Rapids, Des Moines, Fort Dodge, Lamoni, Mason City, Ottumwa, Shenandoah, Sioux City)

DRAFTING & ENGINEERING COMPUTATIONS
Foreman Conferences
Industrial Personnel Problems (Ins.)
Industrial Safety Engineering (Ins)*
Radio, Fundamentals of I*, II*
ULTRA-HIGH FREQUENCY TECHNIQUES

State University of Iowa, Iowa City (Burlington, Cedar Rapids, Clinton, Davenport, Decorah, Dubuque, Keokuk, Waterloo; Moline, Rock Island, Illinois)

A. C. Circuits & Machinery: Operation & Maintenance II, III
Chemistry of Powder & Explosives B
Industrial Electricity I, II
Industrial Safety Engineering (Ins)*
INSPN. OF NAVAL MATLS. (RADIO) (WOMEN)
Insp'n. of Naval Matls. (Radio) (Women)
Methods Analysis: Motion & Time Study (Inservice)
Personnel & Indus. Relations (Ins)*
RADIO COMMUNICATION (Pre-radar)(Ins)
Radio Fundamentals of I*, II*
Supervisor & Foreman Training
Tool Engineering*
Ultra-High Frequency Techniques

KANSAS

Kansas State College of Agriculture & Applied Science, Manhattan

ENGINEERING DRAWING
Inspector Training (For Women)
PRODUCT INSPECTION (For Women)
RADIO COMMUNICATIONS (Pre-radar)(Ins)

University of Kansas, Lawrence (at approximately 35 centers in Kansas and two centers in Missouri)

Aerodynamics
Aeronautical Drafting
Aeronautical Engrg. Terminology (Ins)*
AERONAUTICAL TECHNICIAN MAP DRAWING (Inservice) (For Women)
Aircraft Inspection (Ins.)*
Aircraft Insp'n. - Final Assembly (Ins)
Aircraft Instruments, Principles & Theory (Inservice)*
(continued)

University of Kansas (continued)

Aircraft Matls. & Constrn. Proc (2 C)*
Aircraft Matls. & Construction Processes: Sheet Metal Matls. (Ins.)
Aircraft Materials & Construction Processes: Standards (Ins.)
Aircraft Materials & Construction Processes: Weld. & Heat Treatment
Aircraft Materials & Construction Processes: Wood (Inservice)
Aircraft Radio Test Equipment, Principles & Use*
Chemical Lab. Technician Training
Chemistry of Powder & Explosives (2 C.)
Chemistry of Smokeless Powder & Its Ingredients (For Women)
Cost Accounting (2 C.) (Ins.)*
Crystal Production for Radio Frequency Control*
Descriptive Geometry (Inservice)
Direct & Alternating Currents
Drafting, Advanced*
Engineering Drawing*
Engineering & Shop Liaison (Ins.)
Foreman Conferences
Industrial Accounting (Inservice)*
Industrial Chemistry*
Industrial Safety Engineering*
Industrial Supervision (Ins)* (Women)
Inspection, Advanced
Inspection, Wood Aircraft
Jig Design
Manufacturing Engineering (Inservice)
Mathematics (Inservice)
Mathematics & Mechanics (Inservice)*
Math. for Teachers (Correspondence)
Metallurgy*
Organic Chemistry (Inservice)
Pre-audit of Records (Inservice)*
PRE-SERVICE TRAINING COURSE FOR SIGNAL CORPS UNDER-ENGINEER TRAINEE (Radio)
Personnel Management*
Physics for Teachers (Correspondence)
Precision Inspection, Adv. (Ins.)*
Production Assembly Planning
Production Drafting*
Production Expedite Planning
Production Illustration
Production Planning & Control (Ins)*
Production Process Planning (Ins.)
Production Scheduling (Ins.)
Radio, Fundamentals of I*, II*
Small Power Tools: Electrical (Ins)
Small Power Tools: Pneumatic (Ins.)
Strength of Materials
Stress Analysis (Inservice)
Structural Steel Inspection (Ins.)
Time & Motion Study (2 Courses)*
Tool Design
Tool Engineering (Inservice)*

KENTUCKY

University of Kentucky, Lexington (at approximately 20 centers in Kentucky)

Chemical Testing & Inspection, I
Cost Accounting
Electricity, Fundamentals of I
Engineering Drawing (2 Courses)
ENGINEERING FUNDAMENTALS
Engineering Mathematics (Inservice)
Industrial Chemistry (Inservice)
Industrial Labor Problems & Labor Law
Industrial Safety Engineering*
INTERNAL COMBUSTION ENGINE MAINTENANCE ENGINEERING (Inservice)
Mine Ventilation Engineering*
Office Management
Organic Lab. Techniques (Negroes)
Personnel Administration (Inservice)
Radio, Fundamentals of I*
Radio Theory & Operation
Sanitation, General
Structural Design, Elementary
Testing & Inspection Methods
Time & Motion Study
Ultra-High Frequency Techniques

University of Louisville, Louisville (Jeffersonville, Indiana)

AIRCRAFT INSPECTION (Inservice)
Aircraft Inspection (Inservice)
Analytical Chemistry (Negroes)
Chemical Indus. Microbiology (Ins.)
Chemical Plants, Prodn. Control for (Ins)
Explosives (Inservice)
Industrial Safety Engineering (Ins.)
Metallurgy, Ferrous
Metallurgy, Non-ferrous

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University of Louisville (continued)

Personnel & Production Supervsn. (Ins.)
Practical Distillation, Elem. of (Ins.)
Radio Circuits & Equipment
Radio, Fundamentals of I, II
Radio Maintenance, Repair & Oper.
Topographic Mapping & Photogrammetry (Inservice)
Unified Mathematics (2 C.) (Ins.)

LOUISIANA

Centenary College of Louisiana, Shreveport

Industrial Acctg. for Corporations
Industrial Chemical Analysis
Industrial Cost Accounting (Ins.)
Office Management

Louisiana Polytechnic Institute, Ruston (Shreveport)

Engineering Drawing I*
Jr. Engineer Supplemental (women)
Ordnance Inspection (2 Courses)
Photogrammetry
Physics
PHYSICS & MATHEMATICS, FUNDAMENTAL
RADIO COMMUNICATION (Pre-radar)
Radio, Fundamentals of I*, II*

Louisiana State University, Baton Rouge (Scotlandville)

Accounting, Advanced
Accounting for War Procurement Contracts (Inservice)
Engineering Drawing
Math. for Teachers (Correspondence)
Office Organization & Management
QUANTITATIVE ANALYSIS
Radio Communication, Fundamental

Loyola University, New Orleans

Business Statistics
Cost Accounting (Inservice)
Employment Management
Government Defense Contract Probs.
Mathematics for Instructors
Physical Chemistry & Applications
Physics: Applied Acoustics
Quantitative Analytical Chem. & Technical Analysis
Radio Communications
Radio Physics, Elementary
Radio Physics, Elem. (Negroes)
Transportation & Traffic

Southern University & A. & M. College, Scotlandville

Chemistry & Chemical Testing of Matls.
INDUSTRIAL CHEMISTRY
Quantitative Analytical Chemistry & Technical Analysis

Southwestern Louisiana Institute, Lafayette

Radio, Fundamentals of II

Tulane University, New Orleans

Cartography (Advanced, Elem)
Electricity, Fund. of (Inservice)
Engineering Drawing (3 Courses)
Industrial Safety Engineering (Ins)
Math. for Wartime Teachers
Naval Architect. & Marine Engineerg.
Personnel Administration
Physics, Applied
Physics, General
Production Management
Radio, Fundamentals of I, II
Ship Drafting: Engine & Boiler Room
Ship Drafting: Hulls A, B, C,
Statics & Strength of Materials
Surveying I
Structural Drafting I
Ultra-high Frequency Techniques

MAINE

Bates College, Lewiston

Chemistry, Inorganic
Chemistry, Organic
Quantitative Analysis
Radio, Fundamentals of I, II

University of Maine, Orono (Auburn, Augusta, Bangor, Bath, Biddeford, Brewer, Bucksport, Lewiston, Millinocket, Portland, South Portland)

ELECTRIC POWER GENERATION & ITS DISTRIBUTION
Engineering Draft.(Adv.,Elem.)(Ins)*
Industrial Accounting (Inservice)*
Industrial Safety Engineering*
Machine Design (Inservice)
MATERIALS ENGINEERING & INSPECTION
Mathematics for Engineers (Inservice)
MATHEMATICS FOR TEACHERS
Military Map Making
ORDNANCE INSPECTION (Inservice)
Physics for Engineers*
PHYSICS FOR TEACHERS
RADIO COMMUNICATION (Pre-radar)(Ins)
Radio, Fundamentals of I*, II
Surveying, Elementary

MARYLAND

Johns Hopkins University, Baltimore

Accounting for War Industries
AIRCRAFT ASSEMBLY INSPECTION
Aircraft Equipment
Aircraft Hydraulic Application
Aircraft Inspection, General (Ins.)
Aircraft Radio Installation (Ins.)
Aircraft Structural Analysis, Detailed
Arc Welding Metallurgy & Design I, II
Auxiliary Marine Equipment
Cost Acctg. for War Production (Ins.)
Diesel Engines
Differential Equations, Adv. Appl. of
Electricity Applied to Aircraft
ENGINEERING, BASIC (For Women)
Engineering Applications of Differential Equations
Engineering Drawing, Verification of
ENGINEERING FUND. FOR WOMEN
Engineering Reports, Preparation of
Industrial Instruments
Industrial Mngmt., Prob. of (Ins.)
Industrial Statistics (2 C.) (Ins.)
Industrial Organization & Management
Marine Electrical Applications
Marine Engines I
Materials, Magnetic Inspection of
Mathematics for High School Teachers
Mechanism Design Problems
METALS, ANALYSIS & TESTING OF
Metals, Ferrous (Fundamentals of)
Metals, Non-ferrous
Metallurgy, Ferrous (Inservice)
Metallurgy, Foundry (Inservice)
Naval Architecture, Elem. (Inservice)
Personnel Relations (Inservice)
Photogrammetry & Surveying (2 C.)
Physics for High School Teachers
Plastics
Production Methods & Tool & Gage Design I
RADIO COMMUNICATION
Radio Mechanical Inspection (Ins.)
Shipbuilding, Practical
SPECTROGRAPHIC ANALYSIS, ADV.
Time & Motion Study
Tool & Gage Design II
X-ray Techniques

University of Baltimore, Baltimore

Cost Acctg. for War Industries (Ins)
Office Mngmt. for War Industries (Ins.)
Purchas. & Wartime Procurement (Ins)
Supervisory Problems in Wartime Shipbuilding
Traffic & Transportation (Ins.)
War Contract Procedure & Cost Accounting (Inservice)
Wartime Personnel Problems & Procedures (Inservice)
Wartime Transportation Problems & Procedures (Inservice)

University of Maryland, College Park (Baltimore, Cumberland, Hagerstown; Washington, D. C.)

Aerial & Ground Methods of Mappg. (Ins)
AERONAUTICAL DRAFTING
Aeronautical Drafting I*, II*
Aeronautical Draft. & Design I*, II*
Aircraft Design I
AIRCRAFT MATERIALS & INSPECTION*
Aircraft Materials & Inspection
Aircraft Plant Supervision
Aircraft Stress Analysis I
Aircraft Tool Design
Aircraft Tool Engineering I*, II
Engineering Contracts & Spec. (Ins.)
Engineering Drawing I, II
Engineering Math., Introductory
Engrg. Mechanics & Strength of Matls.
Engineering Physics, Introductory
Industrial Safety Engrg. (Inservice)*
Mathematics of Aircraft Design (Ins.)
Metallurgy & Testing I (Inservice)
Motion & Time Study
Personn. Mngmt. & Indus. Rel. (Ins.)*
Production Planning I
Production Tools & Processes*
RADIO COMMUNICATIONS I, II
Radio, Principles of I, II
Topographic Drafting
Ultra-high Frequency Techniques

MASSACHUSETTS

American International College, Springfield

Amortization Problems of Defense Equipment & Construction
Application of Present Day Cost Systems to Ordnance Contracts
Electroplating, Proc. & Tech. in
Foreman Training
Glass Blowing
Industrial Relations, Principles of
Inspection & Waste Control, Statistical Methods of
Quantitative Chemical Analysis

Boston College, Newton

Applied Chemistry, Elem. of
Applied Physics, Prin. of (Ins.)
Optical Instruments, Theory & Prac. of
Optics, Experimental
PRE-RADAR
Radio Communications, Math. of
Radio Communications Measurements
Radio Communications, Physics of
Radio, Fundamentals of I

Boston University, Boston

Accounting Fundamentals for Executives & Engineers (Ins.)
Accounting for Management Control I(Ins)
Cost Acctg. for Gov't Work (Ins.)
Factory Office Systems (Inservice)
MATHEMATICAL PHYSICS FOR WOMEN TECHNICIANS
Production Control Planning & Scheduling (Inservice)
Purchasing Methods & Procurement During the Emergency (Inservice)

Clark University, Worcester

Industrial Electronics

Harvard University, Cambridge

ALTERNATING CURRENTS
Alternating Currents
CONTROL OF SOILS IN AIRPORT CONSTR.(Ins)
ELECTRONICS & CATHODE RAY TUBES
Mathematics for Teachers
Military Map Making
Physics for Teachers
SANITARY ENGINEERING (Inservice)
Ultra-high Frequency Techniques
WAR PRODUCTION SUPVN., RETRAIN. FOR

Lowell Textile Institute, Lowell

Electricity, Elements of
Engineering Drawing, Advanced
Radio, Fundamentals of II
Textile Testing

Massachusetts Institute of Technology, Cambridge (Boston)

ACCIDENT PREVENTION (Inservice)
AERONAUTICAL ENGRG. FOR NAVAL OFFICERS
Concrete Design
DEGAUSSING COURSE FOR NAVAL ORDNANCE
Engineering Drawing (2 Courses)
Engrg. Prob. of War Plant Protection (Inservice)
FIRE PROTECTION ENGINEERING (Ins.)
Machine Tool Laboratory (Ins.)
Metallography
Military Map Making
NAVAL ARCHITECT. FOR NAVAL OFFICERS
Ordnance Inspection (Inservice)*
Timber Design
ULTRA-HIGH FREQUENCY TECHNIQUES (Ins)
Ultra-high Frequency Techniques
ULTRA-HIGH FREQUENCY TECHNIQUES, TEACHERS TRAINING COURSE IN
Work Simplification

Massachusetts State College, Amherst (Chicopee Falls, Greenfield)

CHEMICAL DECONTAMINATION PROBLEMS
Mechanics & Strength of Matls., Appl.
Radio, Fundamentals of II
Supervision Training (Inservice)
Tool Engineering

Northeastern University, Boston (Babson Park, Northampton, Quincy, Rockland, Salem, Springfield, Watertown, Wellesley, Wellesley Hills, West Hanover)

Chemistry, General (Inservice)
Cost Accounting for Control*
Engineering Drawing (Adv., Elem.)
Engineering Draw. (2 Courses) (Ins.)
Engineering Drawing (For Women)
ENGINEERING FUNDAMENTALS
Engineering, Methods*
Explosives & Ballistics (Inservice)
Foreman Training (Inservice)*
INDUSTRIAL MANAGEMENT
Industrial Safety Engineering (Ins.)
Machine Design
Machine Drawing
MAP DRAFTING & INTERPRETATION*
Map Making
Military Map Making
Materials Inspection*
Mathematics, Applied (2 C.) (Ins.)
Mathematics for Teachers
Metallography
Metallurgical Analysis
Metallurgy I (Inservice)*
OFFICE MANAGEMENT FOR WOMEN*
Ordnance Inspectors, Drafting for
Physics
Production Engrg. Practices (Ins.)
PRODUCTION ENGRG & SUPERVISION*
Production Planning & Control*
RADIO COMMUNICATIONS (Inservice)
RADIO, FUNDAMENTALS OF I, II*
Radio, Fundamentals of I, II
Tool Design for Women (Inservice)
Ultra-high Frequency Techniques

Smith College, Northampton

Radio, Fundamentals of

Tufts College, Medford

Alloy Steels
Chemistry of Plastics & Rubber
Design & Detail, Elementary
Engineering Drawing
Engrg. Metallography & Heat Treatmt.
Rigid Frame Analysis
Timber & Concrete Design (Inservice)
Unit Operations (Inservice)

Wellesley College, Wellesley

Radio, Fundamentals of II

Worcester Polytechnic Institute, Worcester

Electric Motors & Controls (Ins.)
Engineering Drawing
Engineering Mathematics (Inservice)
Engineering Mechanics: Statics (Ins)
Engineering Supervision, Elem. of (Ins)
Machine Drafting
Materials Testing & Inspection
Prod. Engineering, Elem. of (Ins.)
Radio Technicians Training, Adv.
Timber Engineering
Tool Engineering, Elem. (Inservice)
Ultra-high Frequency Techniques

MICHIGAN

Detroit Institute of Technology, Detroit

Aircraft Construction & Materials
Aircraft Drafting
Auditing Procedures (Inservice)
Budgetary Control (Inservice)
Carrier Rate Making Management (Ins)
Cost Control for War Production (Ins)
Engineering, Methods
Engineering Tools & Processes
Foreman Training (Inservice)
Govt Contract Proc. & Acctg. (Ins.)
Industrial Accounting (Inservice)
Industrial Organ. & Mngmt. (Ins.)
Industrial Psychology (Inservice)
Metallurgy, Ferrous & Non-ferrous
Motor Carrier Freight Classification Management (Inservice)
Motor Carrier Freight Tar. Mngmt. (Ins.)
Office Management (Inservice)
Operation Anal. - Time & Motion Study
Personnel Mngmt. & Employ. Tests (Ins.)
Production Engineering
Prodn. Machinery Speeds & Feeds (Ins.)
Radio, Fundamentals of I, II
Railroad Freight Class. Mngmt. (Ins.)
Safety Engineering (Inservice)
Statistical Meth., Applied (Inservice)
Technical Report Writing (Inservice)
Time & Motion Study
Time, Motion & Meth. Study, Applied
Tool & Die Design
Traffic Management, Motor Carrier Law (Inservice)
Wartime Purchasing Procedures (Ins.)

Lawrence Institute of Technology, Highland Park (St. Clair Shore)

Auto & Aircraft Engine Test. (Ins.)
Construction Engineering, Elem. of
Descriptive Geometry
Die Design
Diesel Engine Oper. & Performance (Ins)
Engineering Drawing (2 Courses)
Engineering Drawing for Women (2 C.)
Engineering, Financial (Inservice)
Engineering Fundamentals
Graphical Stress Analysis
Industrial Electronics I
INDUSTRIAL LAB. TECHNICIAN (Women)
Industrial Plastics I, II
Indus. Instrumentation, Prin. of (Ins)
Inspection for War Industry (Women)
Iron & Steel Alloys, Analysis of
Machine Drawing
Materials & Inspection
Materials Testing (Inservice)
Materials Test. Laboratory (Ins.)
Mathematics for Engineers (Ins.)
Mechanics
Mechanical Inspection of War Matls.
Mechanical & Structural Detailing
Metallography for Engineers
Metallurgy of Iron & Steel
Radio Communication
Radio Equipment, Maintenance of
RADIO, FUNDAMENTALS OF I, II
Radio, Principles of (Women)
Radio Transmitters
Simple Steel Structures, Design of
Spectroscopy
Strength of Materials
Time & Motion Study (2 Courses)
Tool Design
Tool & Fixture Design*

Michigan College of Mining & Technology, Houghton (Bessemer, Escanaba, Iron Mountain, Ironwood, Marquette, Menominee, Sault Ste. Marie, Wakefield)

Electrical Communication, Fund. of
Engineering Drawing*
Industrial Safety Engineering (Ins.)
Quantitative Analysis, Technical*
Radio, Fundamentals of I, II
Ultra-high Frequency Techniques

Michigan State College, East Lansing (Battle Creek, Flint, Grand Rapids, Hillsdale, Jackson, Kalamazoo, Lansing, Mt. Pleasant, Muskegon, Port Huron)

Communications, Electrical Fund. of
Engineering Drawing, Elem. (Ins.)
Engineering Draw. & Empirical Design
ENGINEERING FUNDAMENTALS FOR ENGINEERING AIDS IN SIGNAL CORPS
Gages & Gaging Practice
(continued)

Michigan State College (continued)

Hydraulics (Inservice)
Indus. Cost Accounts., Fund. of (Ins.)
Industrial Organ. Chemistry, Fund. of
Indus. Organ. & Scien. Mngmt. (Ins.)
Industrial Safety Engineering (Ins.)*
Mathematics, Applied (Inservice)
Metallography
Metallurgy, Principles of
Modern Timber Struct., Design of
Photogrammetry (Inservice)
Physical Metallurgy, Advanced
Practical Gearing, Advanced (Ins.)
Precision Tool & Cutter Grinding (Ins)
Prodn. Mtls. Inspn. & Testing (Ins.)
Radio, Fundamentals of I*, II*
Steel & Reinforced Concrete Statistically Indeterminate Structures
Time & Motion Study
Tool Design
Ultra-high Frequency Techniques

University of Detroit, Detroit

Aircraft Hydraulic Equipment
Aircraft Industry, Process Prac. in
Airc. Layout & Drafting Procedures
Airc. Layout & Lofting Procedures
Aird. Mtls. & Processes of Inspn.
Airc. Production Methods & Control
Budgetary Control (Inservice)
Chemical Analysis
Cost Accounting
Die Design
Electrical Testing & Inspection
Engineering, Graphical Methods in
Engineering, Methods
Engineering Techniques, Elementary
Foreman Conference Leadership (Ins.)
Foreman Training (Inservice)
Government Contract Procedure
Hydraulics as Applied to Machines
Industrial Accounting
Industrial Management
Industrial Safety Engineering (Ins.)*
Joint Rel. & Collect. Bargaining (Ins.)
Machine Tool Specifications & Inspn.
Mathematics, Applied (2 C.) (Ins.)
Materials Inspection & Testing
Mechanical Drawing (Elem., Adv.)
Metals: Polishing, Etching & Photomicrography
Metal Working Machinery Spec. (Ins.)
Metallography
Metallurgical Inspection & Testing
Motor Traffic Management (Ins.)
Office Organ. & Management (Ins.)
Personnel Selection (Inservice)
Prod. Control in War Indus. (Inservice)
Production Measurement & Inspection
Psychological Problems in Indus. (Ins)
Radio, Fundamentals of I, II
Shop Processes
Tool Engineering (2 Courses)
Topographic Mapping (2 Courses)

University of Michigan, Ann Arbor (Detroit, Flint, Grand Rapids, Jackson, Pontiac)

AIRCRAFT INSPECTION I (Inservice)
Aircraft Power Plants (Inservice)
Carbon & Alloy Steels, Heat Treat. & Hardenability of (Inservice)
Castings, Ferrous (Inservice)
ENGINE ACCEPTANCE TESTING (Inservice)
Industrial Accounting: Auditing
Industrial Accounting I: Fund. of Manufacturing Accounts
Industrial Accounting II: Cost Procedures & Records
Industrial Electronics (Inservice)
Industrial Safety Engineering (Ins.)
Industrial Statistics (Inservice)
Internal Combustion Engines (Inservice)
Light Metal Alloys (Inservice)
Mechanics, Fluid
Mechanical Drawing (Inservice)
Mechanical Vibrations Fund. (Ins.)
Military Map Making
Metallurgical Testing Methods & Their Applications (Inservice)
Motor Vibrations, Theo. Anal. of (Ins.)
Operational Math. in Engrg. (Inservice)
Ordnance Inspn., Prin. & Equip. of (Ins)
ORDNANCE MATERIALS INSPECTION (Ins.)
Plastic Mtls., Types & Characteristics (Inservice)
Production Supervision (Inservice)
Production Supervision, Psychological Factors in (Inservice)
Pyrometry & Indus. Furnace Control
Quality Control, Statistical Meth. (Ins)
(continued)

University of Michigan (continued)

Radio Circuits, Elem Fund. of (Ins.)
Selection of Personnel (Ins.)*
Stress Anal. of Machine Parts, Adv.(Ins)
SURVEYING, TOPOGRAPHIC MAPPING & PHOTOGRAMMETRY
Ultra-high Frequency Techniques
UNDER-ENGINEER TRAINEE (Radio) (Ins.)
Vector Analysis (Ins.)
Welded Steel Details (Ins.)
X-ray Studies in Engrg. Matls. (Ins.)*

Wayne University, Detroit (Ecorse, Monroe, Royal Oak, Wyandotte)

Aerial Photo Map Making
AERONAUTICAL ENGINEERING, INTRO. TO
Aircraft Drafting
Aircraft Engines
Aircraft Production Illustration
Aircraft Stress Analysis
Aircraft Tooling
Collective Bargaining (Ins.)
Construction Materials & Inspection
Corporation & Manufacturing Accounting
Diesel Engines
Dynamometer Operation
Electric Circuits, Elementary
Electronics Engineering I
ENGINEERING DRAFTING (Ins.) (Women)
Engineering Drawing (3 C.)
ENGINEERING DRAWING & SHOP PROCESSES
Engineering, Empirical Equations of
ENGINEERING FUNDAMENTALS
Engineering Nomography (Ins.)
Engineering Problems I*
Engineering Problems & Trig. (Ins.)
Gear Design (Adv., Elem.)
Hydraulic Machines (2 Courses)
Industrial Accounting (Ins.)
Industrial Auditing I (Ins.)
Industrial Cost Control (Ins.)
Industrial Laboratory Plastics
Industrial Organization
Industrial Psychology (Ins.)
Industrial Purchasing (Ins.)
Industrial Safety Engineering (Ins.)*
Jig & Fixture Design
Job Study
Labor Legislation (Ins.)
Machining Methods, Modern
Magnetic Inspection
Materials, Mechanics of
Metallography of Alloy Steels
Metallography, Non-ferrous
Metallurgy II, III, IV
Metallurgy of Aluminum & Magnesium
Metallurgy, Ferrous (Ins.)
Office Management
Personnel Analysis (Ins.)
Personnel Management (Ins.)
Plastic Materials, Technology of
Plumbing Inspection for Engineers & Architects
Production Supervision & Inspection
Purchasing & Materials Control
RADIO ENGINEERING
Radio, Fundamentals of I, II, III
Shop Processes I, II
Spectroscopy, Applied
Statistical Methods Applied to Industry
Strength & Testing of Materials
Stress Analysis: Photoelasticity
Tool Engineering, Advanced
Topographic Map Drafting
Topographic Map Making, Adv.
Topographic Surveying
Traffic Fundamentals
Traffic Management I, II (Ins.)
Traffic Rate Study (2 C.) (Ins.)
Water Purification & Sewage Treatment
X-ray Metallurgy

MINNESOTA

St. Olaf College, Northfield

Radio, Fundamentals of II

University of Minnesota, Minneapolis (Chisholm, Crosby, Duluth, Moorhead, Rochester, St. Paul, St. Peter, Virginia, Winona)

Cost Accounting
Engineering Appl. to Electric Machines
Engineering Drafting for Women
Foundry Control & Casting Inspection
Heating & Ventilating
Industrial Accounting
Industrial Electricity, Fund. of
(continued)

University of Minnesota (continued)

Industrial Instrumentation & Automatic Control I
Industrial Procurement, Stores, & Government Contracts
Industrial Statistics
Inspection Practices for Women
Iron Ore Analysis*
Junior Engineer Supplemental
Marine Drafting
Mathematics, Basic Content for Teachers of High School
Math. with Wartime Orientation for High School or Jr. College
Microwave Radio, Principles of
Motion & Time Study
Motion & Time Study for Women
ORDNANCE INSPECTION FOR CIVIL SERVICE
Personnel Management (Inservice)
Physics with Wartime Orientation (Ins)
PRE-RADAR
Production Control for Women I
Production Engineering
Prodn. Organization & Operation
Radio, Fundamentals of I*, II*
Safety Engineering (Inservice)
Tool Design I, II
Tool & Gage Design
Traffic Management
Ultra-high Frequency Techniques
Welding Procedure, Design, Test. & Inspection

MISSISSIPPI

Mississippi State College, State College (At approximately 20 centers in Mississippi, and at Memphis, Tennessee)

Accounting, Advanced II*
Cost Accounting I, II
Engineering Drawing
Engineering Mathematics (Ins.)*
Engineering Physics (Inservice)
Foremanship (Inservice)
Gov't Contracts & Procedures (Ins.)
Hydraulics (Inservice)*
Industrial Accounting (3 C.) (Ins.)*
Industrial Chemistry II (Inservice)
Industrial Plant Protection (Ins.)
Industrial Psychology (Inservice)*
Industrial Safety Engineering (Ins.)*
Industrial Statistics (Inservice)*
Map Drafting, Elementary (Inservice)
Mechanical Drawing I*, II
Mechanical Drawing I (For Negroes)
Office Management (Inservice)*
Personnel & Employment Mngmt. (Ins.)*
PHYSICS FOR TEACHERS
Plane Land Surveying & Drafting
Production Engineering
Production Engineering in Shipbuilding
Production Management (Ins.)*
Radio, Fundamentals of I, II (Ins.)
River Flow Problems, Adv. (Inservice)
Ship Design & Construction
Ship Hull Design
Shipbldg. Stress Analysis I
Soil Mechanics II (Inservice)
Surveying Instruments (Use) & Field Procedures II (Inservice)
Terpene Chem., Seminar in (Inservice)
Time & Motion Studies (Inservice)
Topographic Map Drafting II

University of Mississippi, University (Batesville, Booneville, Crenshaw, Greenwood, Holly Springs, Indianola, Pontotoc, Sardis, Senatobia, Vicksburg, Winona; Memphis, Tennessee)

Engineering Drawing*
Foremanship & Executive Supervision
Industrial Accounting*
Office Management*
Time & Motion Study

MISSOURI

Missouri School of Mines & Metallurgy, Rolla

Economic Mineralogy I, II (Inservice)
Engineering Drawing (Adv., Basic)
Materials Inspection & Testing
RADIO COMMUNICATION (Pre-radar) (Ins.)
Radio Technician I
Topographic Drafting
ULTRA-HIGH FREQUENCY TECHNIQUES
Ultra-high Frequency Techniques

St. Louis University, St. Louis

Accounting Fundamentals
ANALYSIS, ELEMENTARY I
Calculus for Physicists & Chemists
Fundamentals of (Inservice)
Cost Acctg. for Def. Prodn. (Ins.)
ELECTRICITY & RADIO
Foremanship in Defense Industries
Industrial Management
Industrial Purchasing
Labor Law, Seminar on (Inservice)
Labor Relations (Inservice)
Math. for Physicists, Chemists &
Other Technical Workers, Essen. (Ins)
Office Supervision (Inservice)
Personnel Management
Statistical Methods
Selection, Train. & Maintenance of
Personnel

University of Missouri, Columbia (At approximately 15 centers in Missouri)

ENGINEERING AIDS (Aircraft Radio)
ENGINEERING DRAWING*
Engineering Drawing*
Industrial Accounting (Inservice)*
JR. ENGINEER SUPPLEMENTAL (Women)
Personnel Management*
Production Management (Ins.)*
Radio, Fundamentals of I*, II*
Safety Engineering (Inservice)
Surveying Instruments & Field Procedure*
TOPOGRAPHIC MAP DRAFTING*
Topographic Map Drafting*

Washington University, St. Louis

Aerial Mapping, Elements of (Ins.)
Aerodynamics I, II
Aeronautics, Introduction to
Aeronautical Blueprint Reading (Ins)
Aeronautical Plastics (Inservice)
Aircraft Assembly Jigs & Fixtures
Design I, II
Aircraft Electrical Design
Aircraft Lines Lofting (Inservice)
Aircraft Materials & Processes
Aircraft Tooling, Intro. to (Ins.)
Aircraft Tooling, Matls. for (Ins.)
Airplane Design & Mfg. Practices
Airplane Drafting for Women
Airplane Flutter & Vibration
Airplane Hydraulics, Intro. to
Airplane Power Plants
Airplane Stress Analysis (3 C.) (Ins.)
Calculus & Mechanics (Inservice)
Descriptive Geometry as Applied to
Aircraft Design
Electroplating, Principles of
Engineering Drawing for Women
Engineering Mathematics II (Ins.)
Engineering Mechanics
Explosives, Chemical Properties of
Heat Treating of Steel, Fund. of (Ins)
Industrial Engineering
Industrial Safety Engineering
Mathematics, Elementary I (Ins)
Math. for Engineers, Adv. (Ins.)
Metallurgy, Non-ferrous
ORDNANCE INSPECTION FOR WOMEN
Personnel Management (Inservice)
Photoelasticity (Inservice)
Polarizing Microscope, Appl of (Ins)
Production Management (Inservice)
Radio Engineering
Radio, Fundamentals of I, II
Structural Drafting
Time & Motion Study
Tool Design (Ins.)
Ultra-high Frequency Techniques

MONTANA

Montana State College, Bozeman (Butte, Havre, Missoula)

ENGINEERING DRAWING & DESIGN
RADIO TECHNOLOGY
Radio Technology*
Ultra-high Frequency Techniques

NEBRASKA

University of Nebraska, Lincoln (Grand Island, Omaha, Scottsbluff)

AIRCRAFT ASSEMBLY INSPECTION*
Aircraft Assembly Inspection (2 C.)*
Aircraft Materials Inspection
Aircraft Materials & Parts Inspection
BOMB FILLING INSPECTION (Inservice)
Bomb Filling Inspection*
Cost Accounting (Ins.)
Drafting & Shop Mathematics
Foremanship Training
Industrial Safety Engineering*
Math. for Teachers (Correspondence)
Personnel Management
PHYSICS FOR HIGH SCHOOL TEACHERS
Physics for Teachers (Correspondence)
Production Management (Ins.)
Production Planning (Ins.)
Radio, Fundamentals of I*, II*
SAFETY ENGINEERING (Ins.)
Steel, Phys. Prop. & Heat Treatment of
Tool & Die Engineering

NEVADA

University of Nevada, Reno

Chemistry, Analytical
ENGINEERING FUND.-Jr.Engr. Supp. (Women)

NEW HAMPSHIRE

Dartmouth College, Hanover (Claremont; Springfield, Windsor, Vermont)

Electrical Engineering Applied to Machine Tool Control, Adv. (Ins.)
ENGINEERING DRAWING & MATHEMATICS
Engineering Metals (Ins.)
Fluid Mechanics (Ins.)
Foremanship Training (Ins.)
Industrial Control, Elec. Appl. to (Ins)
Industrial Safety Engineering (Ins.)*
Machine Design (Ins.)*
Mathematics (2 Courses)
Mathematics for Engrg. Draftsmen (Ins.)
Physics for Teachers
Production Planning & Control (Ins.)

University of New Hampshire, Durham (Berlin, Keene, Manchester, Portsmouth)

A. C. Machinery & Control (Ins.)
A. C. Principles & Circuits (Ins.)
Accounting (Ins.)
Aerial Bombardment Protection (Ins.)*
D. C. Circuits & Machinery
ENGINEERING DRAWING
Math. for Navy Yard Designers, Adv.(Ins)
Mechanical Drawing
Metallography, Applied (Ins.)
Personnel Supervision & Training (Ins.)
Radio Technician I
Soil Mechanics (Ins.)
WELDING ENGINEERING
Welding Theory (Ins.)

NEW JERSEY

Newark College of Engineering, Newark

Chemical Engineering for Production Supervisors
Electrical Drafting & Calculations
ELECTRICAL ENGINEERING AIDS (Ins.)
Engineering Drawing (2 Courses)
ENGINEERING, FUNDAMENTALS OF
Engineering Fund. (Jr. Engr. Supp.)
Engineering Job Evaluation & Wage Determination
Gages, Shop Processes & Inspection
Industrial Organization & Scientific Management
Jigs & Fixtures
Machine Elements, Design of
Machine Design, Introduction to
Mathematics for Instructors
Metals, Metallurgy & Physical Properties
Motion Study Techniques
Organic Laboratory Methods, Intro. to
Production Engineering & Control (Ins.)
Punches & Dies
Safety Engineering
Statistical Anal. & Quality Control
Time Study Techniques (2 C.)
Tool Design
Ultra-high Frequency, Intro. to
Ultra-high Frequency Practices

Princeton University, Princeton (Bound Brook, Newark)

Analytical Chemistry, Adv. (Ins.)
Inspection Techniques, Adv. (Ins.)
Organic Chemistry, Adv. A*, B* (Ins.)
Photogrammetry
Physical Chemistry, Adv. (Ins.)
Ultra-high Frequency Techniques

Rutgers University, New Brunswick (At approximately 40 centers in New Jersey)

Accounting, General & Cost (Ins.)
Accounting, Principles of (Ins.)
Aerodynamics (Inservice)
Aeronautical Drafting, Practical Problems in (Inservice)
Aeronautical Stress Analysis (Ins.)
Aircraft Design, Fund. of*
Aircraft Engines, Fund. of*
Aircraft Problems, Practical*
Casting Layout (Inservice)*
Design & Production Methods, Analysis of (Inservice)
Electrical Meters*
Electrical Theory, Applied (Ins.)
Electricity, Fundamentals of (Ins.)
Engineering Drawing, I*, II*
Engineering Drawing (Inservice)
Engineering Materials*
Engineering Math., Advanced (Ins.)
Engineering Mechanics*
Engineering Metallurgy*
Engineering, Methods (2 C.) (Ins.)*
Engineering Problems I*, II* (Ins.)
Fluid Mechanics (Inservice)
Industrial Safety (Inservice)*
Industrial Statistics (Inservice)
Inspection Techniques (Inservice)*
Internal Combustion Aviation Engines, Theory of (Inservice)
Internal Combustion Engines*
Jig & Fixture Design*
JUNIOR ENGINEERING (Ins.) (Women)
JR. ENGINEERING: SPEC.(Ins) (Women)
Machine Design (Inservice)*
Machine Tool Management (Ins.)
Management Problems under Priority Control (Inservice)*
Mark 50 Gun Director Inspection (Ins)
Materials & Products, Inspn. of (Ins)
Mechanics & Hydraulics for Pump Designers (Inservice)
Metallurgy of Steel Castings, Forgings & Weldments (Inservice)
Metallurgy of Steel Wire (Inservice)
Motion & Time Study Applied to Production Control (Inservice)*
Personnel Management (Inservice)*
Power Plant Engineering (Inservice)*
Process Engineering (Inservice)
Production Control (Inservice)
Production Planning (Inservice)
Production Procedure & Control (Ins)
Production Scheduling & Materials Handling (Inservice)
Production Supvn.: Human Prob. (Ins)*
Public Water Supply (Inservice)*
RADIO COMMUNICATION (Pre-radar) (Ins)
Radio Technician Train. Course I*, II*
Safety Engineering (Inservice)*
Sewerage & Sewage Treatment (Ins)*
Strength of Materials*
Surveying & Mapping*
Thermodynamics, Adv. Applied (Ins)
Time Study (Inservice)*
Ultra-high Frequency Techniques

Stevens Institute of Technology, Hoboken

ENGINEERING, INTRODUCTION TO
Engineering Drawing
Engineering Drawing (Women)
ENGINEERING MATERIALS, ELEM. ANAL. OF
MACHINE DESIGN, ELEMENTARY
Math. Review & Ship Prodn. Methods(Ins)
Metallographic Lab. Techniques
Powder Metallurgy, Lab. Tech. in
PROCUREMENT INSPECTION (Ins.)

University of Newark, Newark

Accounting for Women
Auditing, Internal
Cost Accounting (2 Courses)
Gov't War Contract & Acctg. Prob.
Industrial Accounting
Industrial Personnel Office Oper. (Ins)
Industrial Psychology
Job Anal, Eval, & Wage Admin. (Ins.)
Matls. Proc. & Stockroom Control (Ins)
Off. Organization & Mngmt. (Inservice)
Office Prac. & Procedures for Women
Statistics for Women
Traffic Management & Rating (Ins)
Transport. & Traffic Mngmt., Adv. (Ins)

NEW MEXICO

University of New Mexico, Albuquerque (Carlsbad, Clovis, Gallup, Roswell, Santa Fe, Tucumcari)

Concrete Mixes & Building Materials
Engineering Drawing I*, III
Engineering Mathematics, Adv. (Ins.)
Power Distribution
Radio, Fundamentals of I
Route & Construction Surveys
Soil Mechanics
Surveying, Elementary*
Topographic Map Drafting
Ultra-high Frequency Techniques

NEW YORK

Brooklyn College, Brooklyn

Radio, Fundamentals of I, II

Canisius College, Buffalo

Industrial Radiography (Ins.)

Orientation in Basic Math. (Ins.)
Radio, Fundamentals of I, II

The City College of the College of the City of New York, New York (Bathpage, Brooklyn, Farmingdale, Flushing, Jamaica, LongIsland City, Poughkeepsie, WhitePlain

Accounting in a War Industry (Ins)*
Aerial Photographs, Commercial Use & Military Interpretation of
Analytic. Geometry for Teachers
Chem. Engrg. Calculations, Elem. (Ins)
Chemistry for Teachers, Basic I
Cost Procedures & Analysis for War Industries (Inservice)*
Defense Struc., Prac. Detailing of
Descriptive Geom. for Airc. Drafting*
Descriptive Geometry for Draftsmen in Naval Architecture*
Diesel Engine Theory & Prac., Elem. of
Engrg. Mechanics & Basic Design Methods
Explosives Prodn., Testing of
Ferrous & Non-ferrous Ordnance Matls., Phys. Prop. & Methods of Testing
Foremanship Training (Inservice)
Fuels & Lubricants
Geodetic Computation
Heating & Air Conditioning Systems, Estimating, Layout & Design of
Industrial Heat Exhanger Design
Industrial Piping: Design, Layout, & Drafting
Industrial Safety Engineering (Ins)*
Industrial Standards in War Industry
Inspection & Expediting for War Indus.
Internal Auditing & Control for War Industries (Inservice)
Map Preparation & Use
Math. & Elec. Engrg. Applications
Mechanical & Tool Drawing, Adv.
METAL PRODUCTS INSPECTION: ELEM. OF BLUEPRINT READING
Metal Products Inspection: Elem. of Blueprint Reading
Metal Products Inspection: Physical Metallurgy
Metal Products Inspection: Physical Testing
Metal Products Inspection: Specifications, Gaging & Inspection
Military Map Making*
Optical Instruments
Organic Constructional Materials
Physics for Teachers I, II
Physical Metallurgy & Inspn. of Metals
Plane Table Topography & Photogrammetry
Plant Revision, Buildings & Layout Problems in War Industries (Ins)
Plastics, Rubbers & Allied High Polymer Engineering Materials
Production Control (Inservice)
Projection & Drafting Room Practice in Mechanical Drawing*
Radio, Fundamentals of I*, II
Radio & Ultra-high Frequency, Intro. to
Shop Processes, Gaging & Inspection
Specifications, Preparation of (Ins)
Structural Analysis & Design, Elem.
SUB-PROFESSIONAL ENGINEERING COURSE
Surveying Instruments (Use) & Surveying Field Procedure I
Synthetic Rubber Manufacture, Elem. of
(continued)

The City College of the College of the City of New York (continued)

Time & Motion Study
Tool Design, Elements of
Topographic Map Drafting
Traffic & Shipping (Inservice)
Trigonometry & Adv. Algebra for Teachers
Ultra-high Frequency Techniques
War Procurement: Gov't. Contract Problems (Inservice)
Welding, Technical Elements of

Clarkson College of Technology, Potsdam (Canton, Carthage, Deferiet, Gouverneur, Lowville, Malone, Massena, Ogdensburg, Plattsburg, Saranac Lake, Tupper Lake)

Chemical Laboratory Techniques*
Chemical Laboratory Techniques (Women)
Engineering Drawing*
Engineering Mathematics (Inservice)*
Industrial Chemistry, Introductory*
Industrial Costs (Inservice)*
Machine Design, Elements of
Map Making & Surveying*
Metallurgy
Production Management (Ins.)*
Radio, Fundamentals of I*, II*

Columbia University, New York (Bethpage, Long Island City)

Airc. Structural Layout (Ins.) (Women)
Electrical Prin. & Measurements (Women)
ENGINEERING AIDS (Women)
Mechanical Drafting (For Women)
Metallographic Lab. Practice (Women)
Military Map Making
Photogrammetry
Planning Techniques (Ins.) (For Women)
Powder & Explosives, Prodn. & Test. of
Statistical Methods, Elem.
Statistical Methods in Management
Radiography & Its Application to Testing & Inspection (Ins.)*
Topographic Drafting (For Women)
Topographic Mapping
Traff. Administration, Specialized
Transportation Control (Inservice)
Ultra-high Frequency Techniques: Lab.
U. H. F. Techniques: Theory (Ins)
War Transport., Women's Course in

Cooper Union, New York

Engineering Drafting for Women I
Engineering Math., Elem. (Ins.)
Radio, Fundamentals of I

Cornell University, Ithaca (At approximately 20 centers in New York)

Aerodynamics (Adv., Elem.) (Ins.)
Aircraft Descriptive Geometry (Ins.)*
Aircraft Mtls. & Processes (Ins.)
Aircraft Structures, Inter. A, B. (Ins)
Chemical Engineering Prob., Adv. (Ins.)
Communication Engineering (Ins.)
DIESEL ENGINES, THEORY, OPERATION & MAINTENANCE OF (Ins.)
ELECTRICAL COMMUNICATIONS (Pre-radar)
Electrical Engrg., Prin. of A, B, (Ins)*
Electron Tubes & Their Indus. Appl(Ins)
Engineering, Introduction to
Engineering Calculus (Inservice)*
Engineering Mathematics (2 C.) (Ins.)*
Engineering Tools & Processes (Ins.)*
Fuel Engineering (Inservice)
Geom. Optics & Optical Instru. (Ins.)
Heat Power Engineering (Ins.)*
Industrial Cost Control (Inservice)
Industrial Engineering Economy (Ins)*
Industrial Safety Engrg. I (Ins.)*
LOFT & TEMPLATE DEVELOPMENT (Ins.)
Math. & Electrical Engrg Applications
Mechanics & Design, Elem. A, B.(Ins)*
Metallurgical Calculations (Ins.)*
Metallurgy of Iron & Steel (Ins.)*
Military Map Making
ORDNANCE MATERIAL INSPECTION
Organic Chemistry (2 C.) (Ins.)
Personnel Management (Ins)*
Physical Metallurgy (Inservice)*
Production Control (Inservice)*
Radio, Fundamentals of I*
Reinforced Concrete Design (Ins.)*
Soil Mechanics (Inservice)
Structural Design (2 C.) (Ins.)*
Structural Drafting (Inservice)
Time & Motion Study (Ins.)*
Tool Engineering (Ins.)*
Ultra-high Frequency Techniques
Unit Processes in Chem. Engrg. (Ins.)*

Defense Training Institute of the Engineering Colleges of Greater New York, 375 Pearl Street, Brooklyn

ENGINEERING FUNDAMENTALS (Women)

Hofstra College, Hempstead (Garden City)

Algebra & Trig., Essentials of (Ins.)

SUB-PROFESSIONAL ENGINEERING COURSE

Calculus, Integral
Calculus for Physicists, Adv.
Radio, Fundamentals of I

Hunter College of the City of New York, New York

Radio, Fundamentals of I, II

Long Island University, Brooklyn

Cost Accounting (Ins.)
Industrial Accounting (Ins.)
Math. for Prospective Teachers I, II
Organic Chemistry, Applied
Physico-chemical Industrial Testing Methods (Ins.)
Physico-chemical Measurements
Quantitative Analysis: Practical Applications to War Matls., Fund. of
Radio, Fundamentals of I, II
Stat. Methods in Bus. & Indus. (Ins.)
Subject Matter Course for Prospective Teachers of Physics
Vibration & Sound, Theory of

Manhattan College, New York (Brooklyn, Jackson Heights, Yonkers)

A. C. Electricity, Prin. of (Ins)(Women)
Accounting for War Contracts (Ins.)
Chem. for Industry, Basic (Ins.)
Colloidal & Surface Chemistry
Combust. & Economic Util. of Fuel (Ins.)
D. C. Electricity, Prin. of (Ins.)
Electrical Circuit Drafting
Elect. Equip., Test. & Inspection (Ins)
ELEC. & RADIO FOR HIGH SCHOOL TEACHERS
Electricity, Elements of
Engineering Drawing (2 Courses)
Industrial Safety (Ins.)+
Management of Pub. Service Corp. (Ins)
Marine Communications Equip. for Combat & Auxiliary Vessels (Ins.)
Marine Communications Equipment for Cargo Vessels (Ins.)
Marine Drawings, Interpret. of
Materials Testing & Inspection
Metals Testing
Office Management (Ins.)
Optical Production (Ins.)
Optical Prodn. & Testing (Women)
Personnel Management (Ins.)
Prodn. Control Prob. in War Indus. (Ins)
Production Management (Ins.)
Radio, Fundamentals of I, II
Ship Drafting (Elem., Inter.) (Ins.)
Strength of Materials, Elem.
Structural Design Problems
Structural Problems: Substructures (Ins)
Surveying Instruments (Use) & Survey. Field Procedure
Textiles, Testing of (Ins.)
Textiles, Test. & Inspection of
Time & Motion Study (Ins.)+
Topographic Map Making
Traff. & Transportation Control (Ins.)
Trig. & Adv. Algebra for Teachers
Ultra-High Frequency Techniques

New York University, New York (Farmingdale, Staten Island, Tarrytown)

Aerodynamics, Practical (Ins.)
Air Conditioning in War Indus.
Aero. Engines, Instruction of
Aircraft Engine Testing
AIRCRAFT DRAFTING (Ins.)
Aircraft Matls. & Processes (Ins.)
Aircraft Math. (Ins.)
Air. Structural Design, Elem. of
Aircraft Woods (Ins.)
Airport Engineering
Analytical Geom. for Teachers
Calculus for Teachers
Chem. of Engineering Materials
Electronics, Elements of II
ENGINEERING, FUND. OF (Women)
(continued)

New York University (continued)

Factory Planning for Production
Fuels & Combustion with Laboratory
Gasoline & Diesel Engines
Industrial Safety Engineering (Ins.)
Industrial Supervisory Train. (Ins.)
Labor Relations for Supervisors (Ins)
Math. for Teachers, Basic
Metallurgy & Metallography
Metallurgical Spectroscopic Anal.
Methods & Motion Study
Military Sanitation
Naval Architecture
Optics, Applied
PRODUCTION MATERIAL INSPECTION (Ins.)
Personnel Management (Ins.)
Photogrammetry, Elements of
Physics for Teachers, Basic
PLANT PROTECTION ENGINEERING (Ins.)
Production Control (Ins.)
PRODUCTION MANAGEMENT
Production Supervision
Radio, Fundamentals of I, II
RADIO COMMUNICATIONS (Ref-Refr) (Ins.)
Technical Drawing, Elem. of
Tech. Drw., Elem. of (Woman)
Thermodynamics, Applied
Time, Methods & Motion Study (Ins.)+
Topographic Drafting
ULTRA-HIGH FREQUENCY (Electronics II)
Vector Analysis
Wartime Control of Matls. (Ins.)

Newark University, Newark Mills

Accty., Specialized Systems
Auditing & Internal Control for War Industries
Chemical Unit Operations (Ins.)
Chemistry, Industrial
Chem., Elem. Inorganic (Ins.)
Chemistry, Elem. Organic
Cost Accty. in War Industries
Fixed & Variable Budgetary Control
Foremanship
Indus. Chemical Calculations I, II
Industrial Labor Problems
Indus. Organization & Management (Ins)
Indus. Statistics I, II (Ins.)
Office Mngmt., Techniques of
Personnel Superv., Techniques of
Principles & Government Contracts
Purchasing & Stores Control
Quantitative Analysis I, II

Polytechnic Institute of Brooklyn, (Bryan City, Jamaica, Long Island City)

Aero. Dig. & Fixture Design (2 C.)
Aircraft Lofting (4 Courses)
Airfield Engineering
Alt. Cur. Circuits (2 Courses)
Alt. Cur. Electronics & Electronic Circuits
Alt. Cur. Oscillography
Communications Sub. Techniques
Communications Review Course
Electron. Matls., Insps. & Test. of
Die Design (2 Courses)
Die Drafting
Electr. Mfgt., Elements of
Marine Drafting
Marine Piping Drafting
Meteorology Theory, Intro. to

Pratt Institute, Brooklyn

Aerial Photographic Interpret. (Ins.)
Aeronautical Engineering
Aircraft Engrg. for Wom. Engrs.
Chemical Testing & Inspection
Elem. Chemistry & Strategic Metals
Engr. Materials & Specifications
Engineering Measurements
Engineering Statistical Analysis & Quality Control
(Continued)

Pratt Institute (continued)

Fuels, Combustion & Lubricants
Industrial Maintenance
Jig & Fixture Design
Materials Testing & Inspection
Mathematics, Teachers' Course in
Mechanical Design, Advanced
Metallography
Modern Meth. of Analysis for the Rapid Eval. of Indus. Matls.
Physics, Teachers' Course in I, II
Piping Drafting
Production Control
Production Methods
Radio, Fundamentals of I, II
Safety Engineering
Ship Drafting
Stress Anal., Adv.: Column Analogy Method Applied to Piping (Ins.)
Stress Anal., Adv.: Hardy Cross Method Applied to Rigid Frames
Time Study
Tool & Die Design

Rensselaer Polytechnic Institute, Troy (Albany, Loudonville, Schenectady; Pittsfield, Massachusetts)

Accounting & Auditing, Adv. (Ins.)
Airports & Highways (Inservice)
Chemistry of Plastics
Cost Accounting
Electro-mechanical Techniques (Women)
Engineering Metallurgy (2 Courses)
Industrial Safety Engineering (Ins)
JUNIOR PROCUREMENT INSPECTOR TRAINEE
Machine Design
Materials Testing & Inspection (Ins)
Motion & Time Study (Inservice)
Photogrammetry
Plastics Engineering
Production Engineering
Production Planning & Control (Ins)
Production Supervision (Ins.)
Radio, Fundamentals of I*, II*
Radio Engineering I, II
Soil Mechanics
Structural Engineering
Structures, Advanced (Inservice)
Surveying Theory
Traffic Management, Advanced (Ins)
Transportation of Materials (Ins)
Ultra-High Frequency Techniques

St. Bonaventure College, St. Bonaventure (Olean, Salamanca)

Chemistry, General (Inservice)
College Algebra*
College Mathematics (Inservice)
Cost Accounting
Electrochemistry
Foremanship & Supervision (Ins.)
Explosives, Chemistry of A, B
Industrial Management (Inservice)
Industrial Spectroscopy I
Management Statistics
Military Explosives, Prop. of A, B
Office Management (Inservice)*
Personnel Management (Inservice)
Physics, General
Qualitative Analysis
Quantitative Chemical Anal: Volumetric
Radio, Fundamentals of I*, II

Syracuse University, Syracuse (Fulton, Geneva, Ilion, Oneonta, Oswego, Rome, Utica, Wanakena)

Accounts., Adv. Theory & Pract. of*
Aerial Photogrammetry
Auditing (Inservice)
Chemical Engrg. for Production Engrg.
Concrete Design & Construction
ELECTRICAL COMMUNICATIONS (Pre-radar)
Electrical Engineering, Elementary
Electronics Tubes & Their Uses
Engineering Drawing
Engineering Fund. (Jr. Engr. Stud.)
Engineering Math., Essen. of (Ins)*
Engrg. Thermodynamics, Prin. of (Ins)
Fuels: Anal. Combust. & Conservation
Industrial Chemical Stoichiometry
Industrial Instrumental Analysis
Industrial Safety Engrg. I*, II (Ins)
Math. for Teachers of College Algebra, Basic
Mathematics for Teachers of Trigonometry, Basic
Mechanical Drawing*
Mechanics of Materials*

(continued)

Syracuse University (continued)

Metal Inspn., Theory & Practice of II
Metallurgy, Principles of*
Military Map Making
Motion & Time Study
Office Organ., Supvn. & Mngmt.(Ins)*
Physics for Teachers, Basic I, II
Plane Surveying
Pre-cost Accounting
Psychology, Industrial
Prod. Supvn. for Engineers (Ins.)
Radio, Fundamentals of I*, II*
Route Surveying & Highway Engineerg.
Surveying & Topo. Mapping, Adv & Elem.
Spectrographic Instruments
Struc. Engrg. (Graph. Anal. of Stresses)
Ultra-high Frequency Techniques

Union College, Schenectady

Chemistry Applied to Industry
Chem. for Indus. Workers, Applied
Cutting Tools, Design & Appl. of (Ins)
Drafting, Advanced (Inservice)
Draft. & Drafting Room Practice (Ins.)
Electron Tubes
Engrg. Math. with Calculus I, II (Ins)
Heat Trans. & Air Flow (Inservice)
Industrial Colloid Chemistry (Ins.)
Inspection for Control of Quality
Machine Design I, II
Math., Prac. Appl of (Inservice)
Math. Applied to Radio Communication I, II
Mechanical Power Plant Engrg. I, II
Meth. Improvement by Motion Study (Ins)
Metallography, Principles of I, II
Optics, Applied
Production & Cost Control (Ins.)
Quality Control in Quantity Mfg. (Ins)
Radio Communication I, II, III
Tool Design: Dies
Tool Design: Jigs & Fixtures
Weld. Theory & Practice, Elem.
Welds, Design, Inspn. & Test. of
Welds & Welded Struc., Desn. & Prop. of

University of Buffalo, Buffalo (Batavia, Dunkirk, Jamestown, Kenmore, Lackawanna, Lancaster, Lockport, Tonawanda)

Industrial Acctg. & Cost Analysis*
Industrial Chemistry I
Industrial Safety I*, II* (Ins.)
Industrial Supervision (Ins.)*
Personnel Mngmt. & Labor Relations(Ins)
Production Control (Inservice)*
Radio Technician Training I*, II

University of Rochester, Rochester

Chem. Engineering for Production
Drafting, Principles of (Women)
Engineering Draw., Elementary
Engineering Mathematics (Adv. Elem.)
Engineering Physics (Inservice)
Industrial Statistics (Inservice)
Metallurgy
Microwave Radio, Prin. of I, II
Military Map Making
Optics, Applied (Inservice)
Process Engineering I
Production Planning & Control
Radio, Fundamentals of I, II
Time & Motion Study
Tool Design (Adv., Elem.)

Vassar College, Poughkeepsie (Newburgh) Radio, Fundamentals of I, II

NORTH CAROLINA

Agricultural & Technical College of North Carolina, Greensboro (Charlotte, Durham, Raleigh, Winston-Salem)

Analytical Chemistry, Basic*
Analytical Chemistry, Basic (Women)
Engineering Drawing*
Math. for High School Teachers
Organic Chemistry, Basic*
Radio Communication*

Duke University, Durham (Burlington,Draper,High Point,Leaksville,Spray)

Acctg., Corporation & Manufacturing
CHEMISTRY OF EXPLOSIVES B
Cost Accounting
Engineering Drawing
Industrial Elect., Elements of
Industrial Safety Engineering*
Radio, Principles of

North Carolina College for Negroes, Durham (Greensboro, Raleigh)

Accounting, Principles of
Analytical Chemistry*
Biochemical Laboratory Techniques
Chemical Industrial Microbiology*
Industrial Chemistry
Industrial Mngmt. & Supervision
Industrial Organ. & Scientific Mngmt.
Industrial Psychology
Management & Bus. Prac., Fund. of
Office Management
Office Organization & Management
Personnel Problems (2 Courses)*
Personnel Administration*
Statistical Analysis, Elementary
War Emergency Business Training

North Carolina State College, Raleigh (At approximately 25 centers in North Carolina)

Aerial Bombardment Protection*
AIRCRAFT INSPECTION
Aircraft Inspection
Aircraft Instruments
ARCHITECTURAL & MARINE DRAFTING
ARMY AIR CORPS INSPECTORS, TRAIN. FOR
CHEMICAL TESTING & INSPECTION
Cost Anal. for Machine Tool Oper. (Ins)
DIESEL ENGINEERING (Inservice)
Electrical Engineering, Fund. of
ENGINEERING DRAWING*
Engineering Drawing*
ENGINEERING FUND. (Jr. Engr. Supp.)
Engineering, Methods
Fabric Testing & Analysis
FABRIC TESTING & INSPECTION
Industrial Chemistry, Introductory
Indus. Chem. Water Plant Oper. (Ins)
Industrial Safety Engineering (Ins)*
Marine Engineering, Elem. (Ins.)
MATERIALS TESTING & INSPECTION
Materials Testing & Inspection
Naval Architecture, Elem. (Ins.)
PRE-RADAR TRAINING (Inservice)
Radio Communication
SURVEYING*
Surveying (Inservice)
Ultra-high Frequency Techniques
War Prodn. Engrg. & Contracting

University of North Carolina, Chapel Hill (Charlotte, Fontana Dam, Greensboro, Raleigh, Winston-Salem)

Industrial Mngmt. & Supvn. (Ins.)
Manufacturing Acctg., Prin. of*
MATHEMATICS FOR HIGH SCHOOL TEACHERS
Math. for H. S. Teachers (Correspond.)
Physics for College Teachers
Physics for H. S. Teachers (Corres.)
Production Cost Accounting

NORTH DAKOTA

North Dakota Agricultural College, Fargo

Fundamentals of Radio, I, II
Mathematics, College (Algebra, Trigonometry, Analytic Geometry)

University of North Dakota, Grand Forks (Bismarck, Minot)

ENGINEERING MATH. & PHYSICS COMBINED
LABOR & PERSONNEL MANAGEMENT
RADIO COMMUNICATIONS (Pre-radar)(Ins)
Radio Technician Training I*

OHIO

Antioch College, Yellow Springs (Dayton, Springfield)

Basic Mathematics - Algebra
Electron Tubes
Engineering Drafting (Women)
Industrial Spectroscopy
Metallography*

Case School of Applied Science, Cleveland (Alliance, Ashtabula, Berea, Canton, Elyria, Lorain, Painesville, Ravenna, Warren, Youngstown)

AIRCORPS INSPECTION (Inservice)
Chemical Engineering for Prodn. Supvn.
Chemistry, Analytical
Diesel Engines (Inservice)
Explosives, Analysis of
Electrical Control, Adv. (Ins.)
Electrical Maintenance & Control
Hydraulic Calculations, Simple
Industrial Materials Analysis
Industrial Process Control
Industrial Safety Engrg. (3 C.) (Ins.)*
JUNIOR ENGINEERING AID TRAINING
JUNIOR ORDNANCE INSPECTOR (Ins.)
Machine Design, Fund. of I*, II*
Machine Detailing
Machine Drawing (2 C.)
Machine Drawing with Mathematics
Machine Tool Engineering A, B (Ins.)
Marine Engrg. & Naval Architecture
Materials Testing & Inspection
Metallurgy, Practical & Inspection
Physical Chemistry (Ins.)
Production Engineering (Ins.)
Radio Technician Training II
Route Surveys & Earthwork
Structural Design Problems
Surveying & Photogrammetry, Adv.
Timber Construction for War Indus.
Tool Design, Fundamentals of
Topographic Map Drafting
Topographic Map Plotting & Inter.
Ultra-High Frequency Techniques
Welding, Electric Resisting (Ins.)
Welding Laboratory (Ins.)

Penn College, Cleveland

Electrical Elements in Sub-station Operation (Ins.)
Engineering Drafting
ENGINEERING DRAWING
Engineering Drawing (Ins.)
ENGINEERING FUND. (Jr. Engr. Supp.)
Engineering Fund. (Jr. Engr. Supp.)
Executive Supervision (Ins.)
Gov't Contract Procedure & Accounting
Government Activities, Intro. to (Ins.)
Industrial Accounting (2 C.)
Industrial Electricity II (Ins.)
Industrial Engineering (Ins.)
Industrial Mathematics (Ins.)
Industrial Safety Engineering
Labor Relations in War Indus. (Ins.)
Machine Principle Just Estimating
Materials, Theory & Testing of (Ins.)
MATERIALS INSPECTION & TESTING: METALS
Materials Inspection & Testing: Metals
Mechanical Inspection (4 C.) (Ins.)
Metal Cutting, Theory of (Ins.
Metal Cutting Tool Technology (Ins.)
Metallography, Ferrous (Elem.) (Ins.)
Motion Economy & Time Study (Ins.)
Personnel Mngmt. in Time of War (Ins.
Personnel Testing (Ins.)
Physics of Mechanics (Ins.)
Plastics Utilization Technology (Ins.)
PRE-SERVICE TRAINING COURSE FOR SIGNAL CORPS UNDER-ENGINEER TRAINING: RADIO
Production Engineering (Ins.)
Production Supervision (Ins.)
Production Supvn. in Steel Mfg. (Ins.
Production Tooling, Theory of (Ins.)
Radio Communications Technology I, II
Reinforced Concrete Design (2 C.) (Ins.
Simple Structures, Adv. Design & Anal. of
Statistical Methods for Business Mngmt.
Strength & Properties of Materials
Time & Motion Study (Ins.)
Tool Engineering
Tool Theory for Gear Cutting (Ins.)
Topographic Map Drafting
Topographic Mapping

Heidelberg College, Tiffin — TECHNICIAN'S COURSE IN CHEMISTRY

Miami University, Oxford (Dayton, Eaton, Hamilton, Middletown)

Acctg. Prac. for War Indus., Adv.
College Algebra*
Cost Accounting
Gov't. Contract Proced. & Acctg.
Industrial Accounting
Industrial Accounting (For Women)
Industrial Draw., Interpretation of*
Industrial Organ. & Mngmt. (Ins.)
Industrial Psychology
Industrial Psychology (For Women)
Industrial Statistics
Labor-Management Cooperation
Labor Relations, Management of
Payroll Accounting*
Personnel Management (Inservice)
Personnel Selection*
Radio, Fundamentals of I
Supervisory Management*
Traffic Management
Trig: Special Emphasis for Teachers

Ohio Northern University, Ada (Bucyrus, Findlay, Galion, Greenville, Lima, St. Marys, Troy, Van Wert)

Diesel Engineering I
Electrical Engrg., Elements of*
Electrical Engrg. Mathematics
Electrical Testing, Advanced
Electronics, Elementary
Engineering Drawing I*, II*
Engineering Math., Adv. (Ins.)
Industrial Accounting (Inservice)
Industrial Analytical Chemistry
Industrial Mathematics (Inservice)*
Inspection & Testing
Machine Design
Materials Inspection & Testing*
Metallurgy of Iron & Steel
Organic Chemistry, Introductory
Power Plant Engineering I
Production Engineering*
Radio Technician Training*
Safety Engineering (Ins.)*
Tool & Die Engineering (Inservice)

Ohio State University, Columbus (Adena, Alliance, Mansfield, Marion, Mt. Vernon, Newark, Powhattan, Springfield, Steubenville)

Aerodynamics, Elements of (Ins.)
Airplane Stress Analysis
Analytical Chem. Tech. for Women
CHEMISTRY OF EXPLOSIVES
Chemistry of Explosives
Cost Accounting I*, II
DIESEL ENGINE OPERATION, THEORY & PRACTICE (Inservice)
Engineering Design, Fund. of (Ins.)
Engineering Drawing I, II*, III*
Engineering Math. (3 C.) (Ins.)*
Engineering Prob. in Mechanics (Ins)
Gov't. Contracts & Accounting
INDUSTRIAL ACCIDENT PREVENTION (Ins)
Industrial Accounting*
Industrial Auditing
Industrial Safety, Fund. of (Ins.)*
Inspection of Def. Matls. & Products
Inspector Training I*, II
Metallurgy III (Process)
Metallurgy of Iron & Steel I (Ins)
Office Management
Personnel Management I*, II*
Production Control I*, II
Production Engineering (Ins.)
Psychology Applied to Industrial Personnel Problems*
Purchasing, Priorities & Inventory Control
Quantitative Chem. Tech. (Women)
RADIO COMMUNICATION (Pre-radar) (Ins)
Radio, Fundamentals of I
Shop Management I, II
Strength of Materials (Inservice)
Time & Motion Study*
Tool Design I*
Traffic Management I*, II*
Ultra-high Frequency Techniques

Ohio University, Athens (Chillicothe, Gallipolis, Hillsboro, Ironton, Lancaster, Logan,Marietta,Middleport,Pomeroy,Portsmouth,S. Point,Zanesville; Ashland,Ky)

Accounting, Corp. & Manufacturing*
Accounting, Factory & Industrial*
Accounting for War Contracts (Ins)*
Accounting for War Production*
Anhydrous Ammonia & Ammonium Nitrate Solution, Synthesis & Analysis of
Engineering Mathematics (Ins.)*
Industrial Organ. & Scien. Mngmt.*
Inorganic Chemistry (Inservice)
Integral Calculus & Kinematics
Mechanical Drawing I*, II*
Personnel Rel., Indus. Hygiene & Safety*
Petrol. Prodn., Synthesis & Anal. of I
Plane Surveying Theory (Inservice)*
Radio, Fundamentals of I*, II*
Time & Motion Study

University of Akron, Akron (Apco)

Aerodynamics (Inservice)
Aircraft Production Engrg. (Ins.)
Chemical Engrg. for Prodn. Supvn.
Engineering Lofting (Inservice)
Engineering Mathematics (2 C.) (Ins.)
Engineering Physics (Inservice)
Industrial Production Problems (Ins)
Industrial Safety, Fund. of (Ins)
Instruments, Precis. Measuremt. (Women)
Matls., Inspection & Testing of (Ins)
Prodn. Management & Control (Ins.)
Prodn. Supervision (2 C.) (Ins.)
Prodn. Supervision, Human Problems in (Inservice)
Radio Technology
Structures & Stresses
Time Study (Inservice)
Tool Engineering

University of Cincinnati, Cincinnati (Hamilton, Middletown)

Diesel Engines*
Engineering Drawing (2 C.) (Ins.)
Industrial Safety Engineering (Ins)*
Mapping & Photogrammetry (Ins.)
Materials Inspection & Testing*
Math. of Radio Circuits, Prac.
Metallurgical Inspection & Testing
Modern Supervision, Tech. of (Ins)
Production & Labor Statistics
Production Supervision
Radio Equip. & Inspection (2 C.)
Radio Technology
SIGNAL CORPS JR. ENGRG. AID(Airc.Radio)
Tool Design (Elementary, Advanced)
Tool Engineering
Ultra-high Frequency Techniques
War Contract Cost Accounting Practice (Inservice)*
War Production Accounting (Women)*

University of Dayton, Dayton (Wilmington)

Machine Drawing
Mathematics, Unified I, II (Ins.)
Motion & Time Study
Numerical Anal. for Engrg., Appl.(Ins)
Plant Management
Radio, Fundamentals of I, II (Ins.)
Radio Technician Train., Inten. II

University of Toledo, Toledo (Bryan,Defiance,Fostoria,Fremont,Sandusky,Tiffin)

College Chemistry, Intro. to (Ins.)
Dies, Jigs & Fixtures
Electrical Equip. Engineering I*, II
Engineering Drawing (3 Courses)*
Engineering Mathematics (2 C.) (Ins.)*
Engineering, Methods (Time & MotionStudy)
Engineering Physics (Inservice)
Executive Personnel Conferences (Ins)
Foundry Technician Training
Government Contract Procedure (Ins.)
Gov't. & Indus. Traffic Mngmt. (Ins.)
INDUSTRIAL DRAFTING FOR WOMEN (Ins.)
Industrial Management I, II (Ins.)
Industrial Office Management (Ins.)
Industrial Safety Engineering
Internal Combustion Engines
Materials Test. & Metallurgy (Ins)*
Math., Applied (Inservice)*
Metallurgy, Applied
Metallurgical Lab. Tech. Training
Personnel Admin. & Labor Rel. (Ins.)
Plant Engineering
(continued)

University of Toledo (continued)

Production Cost Accounting (Ins.)
Production Engineering
Production Management & Materials Control (Inservice)
Production Materials, Inspection of*
Production & Material Control
Production Materials & Layout Work, Advanced Inspection of
Production Supervision (Ins.)
Pyrometry & Heat Treating
Radio Technician Training I, II
Surveying & Topographic Drawing
Tool Engineering
UNDER ENGINEER TRAINEE (Ins.)

Western Reserve University, Cleveland (Elyria, Painesville, Youngstown)

Business & Production Statistics*
Chemistry in the Service of War (Ins)
Cost Acctg. for War Production*
Industrial Accounting*
Industrial Chemical Analysis
Industrial Electrochemistry
Industrial Organ. & Labor I, II (Ins)
Management & Personnel Procedures for Foremen (Inservice)
Managing Personal Rel. in Indus. (Ins)
Matls. Operation & Control (Ins.)
Materials Procurement
Mathematics for Teachers, General
Office Management (Inservice)
Personnel Mngmt., Prob. in (Ins.)
Radio, Fundamentals of I, II
Strategic Organic Chemicals, Synthesis & Use of
Traffic & Shipping Fund. (Ins.)
War Contract Laws, Procedures & Accounting Requirements

Wilberforce University, Wilberforce

ANALYTICAL CHEMISTRY
METALLURGICAL ANALYSIS

Youngstown College, Youngstown

Chemical Analysis I (Basic)
Chemical Analysis II (Industrial)

OKLAHOMA

Langston University, Langston (Guthrie, Wynnewood)

Engineering Drawing*
Industrial Engrg. & Labor Relations
Industrial Safety Engineering
Engineering Fund. (Jr. Engr. Supp.)
Radio Technician*
Refrigeration & Air Conditioning - Principles & Practice

Oklahoma A. & M. College, Stillwater (Alva, Blackwell, Cushing, Drumright, Edmond, Enid, Guthrie, Pawnee, Tahlequah)

Aircraft Drafting (Inservice)
Aircraft Inspection*
AIRCRAFT PRODUCTION CONTROL
Cost Accounting for War Production*
ENGINEERING DRAWING
Engineering Drawing*
ENGINEERING FUNDAMENTALS
Engineering Fund. (Jr. Engr. Supp.)
Indus. Draft. & Blueprint Reading
Industrial Safety Engineering
Mathematics, Applied*
Petroleum Chem., Introduction to
Physics (2 Courses) (Inservice)
Spare Parts Production Control

Oklahoma City University, Oklahoma City

Freight Rate Management
Industrial Accounting (2 Courses)
Industrial & Personnel Mngmt. (2 C.)
Inorganic Chemistry, General
Personnel Management
PRODUCTION, SUPVN. & MNGMT. (Women)
Statistics (2 Courses)

University of Oklahoma, Norman (At approximately 30 centers in Oklahoma)

Aerial Photographs, Interpretation of
AIRCRAFT INSPECTION, FINAL (Ins.)
Aircraft Inspection Tech. & Proc.
Aircraft Sheet Metal Inspection
Aircraft Tool Design
Construction Engineering (Ins.)*
Cost & Industrial Accounting*
Engineering Drawing I*, II*
Engineering Mathematics, Elem.*
Engineering Physics*
Foremanship (Inservice)*
Industrial Acctg. (2 Courses)*
Industrial Chemical Analysis*
Industrial Personnel Mngmt. (Ins)*
Industrial Safety Engrg. (Ins.)*
Industrial Supervision for Women*
Liaison Engineering Procedure
Math. for Electricians & Radiomen*
Metals, Inspection & Testing of
Motion & Time Study (Ins.)
Non-metallic Matls., Insp. & Test. of
Organ. & Mngmt. of Indus. Enterprises
Petroleum Products, Testing of (Ins)
Plane Surveying
Precision Inspection
Production Control: Assembly
Production Control: Fabrication
Production Control: Spare Parts
Production Supervision (Ins.)
Radio Theory & Technique I*, II*
Ultra-high Frequency
Welding Theory & Design*

University of Tulsa, Tulsa

Aerial Photography & Photogrammetry
Aircraft Analytical Geometry (Ins)
Aircraft Inspection
Aircraft Materials & Processes
Aircraft Production Control
Aircraft Production Planning
Descriptive Geometry
Engineering Drawing (2 Courses)
Engineering Mathematics
Engineering Mechanics
Production Illustration
Radio, Fundamentals of I
Safety Engineering
Structural Steel Design, Fund. of
Topographic Mapping

OREGON

Oregon State College, Corvallis (Bend, Booth, Eugene, Klamath Falls, Medford, Portland, Salem, Seaside, Tillamook)

Engineering Computations (Ins.)
Engineering Design, Elementary
Engineering Drawing, Advanced
Engrg. Drawing & Lettering, Elem.
Industrial Safety Engineering (Ins)*
Machine Design (Inservice)
Marine Electricity
Math. for Teachers (Correspondence)
Metallurgy of Aircraft Materials
Physics for H. S. Teachers (Corres.)
Production Control (2 Courses)(Ins)
Radio Communications, Fund. of*
Radio, Elem. of (For Women)
Radio, Fundamentals of I*, II

PENNSYLVANIA

Bryn Mawr College, Bryn Mawr

ANALYTICAL CHEMISTRY (Inservice)

Bucknell University, Lewisburg (Wilkes-Barre)

Chemical Engineering for Production Supervision
Engineering Drafting I, II
Engineering Drawing I, II
Engineering, Foundations of
Industrial Inspection Methods
Metallurgy & Metallurgical Testing
Radio Communication, Elements of
Surveying Instruments (Use) & Surveying Field Procedure

Carnegie Institute of Technology, Pittsburgh (Beaver, Beaver Falls, Ellwood City, Meadville, New Wilmington, Washington)

Aerodynamics (Adv., Elem.)
Aeromechanics, Elements of
Aircraft Drafting*
AIRCRAFT INSPECTION (Inservice)
Chemistry Tech. & Lab. Processes
College Chem., Refresher Course in
College Math., Refresher Course in
College Physics, Refresher Course in
Cost Control (2 Courses) (Ins.)*
Drafting Practices*
Electricity, Practical
Engineering Drafting, General*
Engrg. Map & Plan Reproduction
Engineering Math., Review of (Ins)
Heat Engines, Testing of
Industrial Chemical Analysis, Elem.
Industrial Chemistry, Elementary
Industrial Management
Industrial Relations & Mngmt. I, II
Machine Design
Metallurgical Engrg. (2 Courses)*
Metallurgy, Practical
Metallurgy of the Steel Foundry (Ins)
Motion & Time Study*
Office Management (Inservice)
Personnel Administration, Instructor Training for
Personnel Management (Inservice)*
Radio, Fundamentals of I*
ORDNANCE INSPECTION (Inservice)
Steel-heating Furnaces
Strength of Materials
Structural Detailing & Design
Surveying & Mapping*
Testing & Inspection
Tool Engineering, Elementary

Drexel Institute of Technology, Philadelphia (Bristol, Edgystone, Johnsville, Upper Darby; Camden, New Jersey)

A. C. Circuit Theory (Inservice)
Aerodynamics & Airplane Design (Ins.)*
Aeronautical Engineering (3 Courses)*
Aircraft Instruments I, II (Ins.)
Aircraft Technology (Inservice)
Airplane Lofting
Chemical Engineering Calculations
Chemical Engrg. Plant Design (Ins.)
Chemistry of Metals & Alloys (Ins.)
D. C. Circuits & Machinery
Electronics I (Inservice)
Engineering, Elements of (4 C.)*
Engineering Drawing (2 Courses)
Engrg. Drawing for Aircraft (Ins.)
Engineering Math., A, B (Ins.)
Engineering Math. for Teachers
Engineering Physics for Teachers
Industrial Chemical Control Methods
Inspection of Materials A
Machine Tool Theory, Elementary*
Manufacturing Processes*
Mechanics, Elementary
Mechanics & Strength of Matls. for Aircraft (Inservice)
Metallurgy for Chemists (Inservice)
Metallurgy & Heat Treatmt. of Steel
Metals, Physical Properties & Inspection of
Military Optical Instruments, Theory & Construction (Ins.)
Organic Chemistry for Engineers
Petroleum Refining
Plastics
PROCUREMENT INSPECTOR TRAINING
RADIO COMMUNICATION (Pre-radar)(Ins)*
Spectroscopy, Applied
Textile Technology I (Inservice)
Welding Engrg. Elem., Adv. (Ins.)*

Franklin & Marshall College, Lancaster

Applied Chemistry, Fund. of
Auditing
Business Statistics, Applied
Chemical Anal., Tech. Methods of (Ins.)
Cost Accounting
Industrial Accounting (Inservice)
Industrial Organization & Mngmt. (Ins)
Math. & Physics, Fundamentals of
Office Management
Personnel Management (Inservice)
Plastics, Prodn., Prop. & Util. of
Production Planning & Control
Radio, Fundamentals of I

Grove City College, Grove City (Slippery Rock)

Diesel Engines, Theory & Operation
Engineering Drawing*
Engineering Mathematics (Inservice)
Metallurgy & Metallography

Haverford College, Haverford

Engineering, Elements of
Mechanics & Strength of Materials
Radio, Fundamentals of I

Lafayette College, Easton

Chemical Engineering Calculations
Engineering Drafting, Elem. (Women)
Engrg. Specifications & Reports
Fuels & Combustion
Industrial Electricity
Industrial Relations
Job Instructor Training
Materials Inspection & Testing
Math. & Physics for Teachers
Metallurgy & Metallography
Organic Chemistry for Engineers
Plastics
Radio Engrg., Elements of
Safety Engineering

Lehigh University, Bethlehem

DIESEL ENGINEERING (Inservice)
Radio, Fundamentals of I
Ultra-high Frequency Techniques

Muhlenberg College, Allentown

Chemistry, Fundamentals of
Industrial Organic Chemistry (Ins.)
Mathematics (Elem., Inter.)
Math. (Adv.) as Applied to
Physics & Chemistry (Inservice)
Math. & Physics, Fund. of (Ins.)
Physics, General
Radio Communication, Elem. of I, II
Spectroscopy
Technical Chemical Analysis
Technical Qualitative Analysis

Pennsylvania Military College, Chester
Engineering, Elements of

Pennsylvania State College, State College (At over 100 centers in Pennsylvania)

Aerodynamics (Inservice)*
Aeronautical Engrg., Elem. Prin. of*
Air Conditioning
AIRCRAFT DRAFTING (For Women)
Aircraft Drafting
Aircraft Engines: Radial Type (2 C.)*
Aircraft Production Processes*
Applic. of Descriptive Geometry to Orthographic Projection*
Auditing (Inservice)*
Chemical Laboratory Techniques*
Chemical Thermodynamics
Chemistry of Explosives
Chemistry of Metals & Alloys (Ins.)*
Chem. of Paints, Varnishes & Lacquers*
Coal Distillation*
Coal Distillation & By-products*
Combustion of Fuels*
Combustion of Liquid & Gaseous Fuels
Corp. & Manufacturing Accounting*
Cost Acctg. for War Production (Ins)*
Cost Control*
Curves & Earthwork
Die Design*
DIESEL ENGINEERING (Inservice)
Electric Furnaces
Electric Meters, Instruments & Meas.*
Electric Motor Control*
Electric Power Control*
Electrical Engineering, Fund. of*
Electricity & Magnetism, Intermediate
Engineering, Ceramic
Engineering Drafting*
Engineering, Foundations of I*, II
Engrg. Mathematics, Applied (Ins.)*
Engrg. Materials, Chemistry of I, II
Engineering Mechanics*
(continued)

Pennsylvania State College (continued)

Factory Planning & Layout*
Heat Treament Atmosphere Control
Heating & Ventilation
Hydraulics
Industrial Accounting*
Industrial Drafting (2 Courses)(Ins)*
Industrial Drafting Practices:
  Aircraft Drafting
  Electrical Drafting
  General Drafting*
  Mechanical Drafting
  Sheet Metal Layout & Template Design
  Tracing
Industrial Electricity*
Industrial Electronics*
Industrial Mngmt. for Prodn. Supvn:
  Industrial Management
  Industrial Psychology
  Industrial Safety
  Industrial Supvn. (Controls)
  Industrial Supvn. (Organization)
  Job Training
  Personnel Functions of Mngmt.
  Preforemanship
Industrial Organic Chemistry*
Industrial Processes & Controls
Industrial Transformers*
Instrumentation*
Internal Combustion Engines
Iron & Steel Products, Inspection of*
Job Analysis*
Job Analysis & Wage Systems*
Laboratory Techniques (Inservice)
Machine Design*
Management Statistics*
Manufacturing Procedures for Women
Materials, Physical Testing of*
MATERIALS TESTING & INSPECTION
Math. & Fund. of Elec. Engrg.*
Mechanical Engrg. (Heat Power)
Mechanics, Applied*
Metallurgy of Welding Steel*
Motor Freight Management (Ins.)*
Non-ferrous Metals, Production of*
Office Management*
Office Personnel Management*
Open Hearth Inspection*
Operations Inspection*
Optical Instruments
Ordnance Inspection*
Personnel Management (Inservice)*
Petroleum Laboratory Techniques (Ins.)
Petroleum Production Lab. Techniques
Physics for Teachers*
Physics & Chem. of Fluorescence
Plastics, Prodn. Prop. & Util. of*
PRODN. ASSISTANTS, COURSE FOR (Ins.)
Production Control*
PRODUCTION CONTROL
PRODUCTION ENGINEERING FOR CONFERENCE LEADERS (Inservice)
Production Engineering:
  Advanced Inspection Methods*
  Industrial Organ. & Mngmt.*
  Manufacturing Methods (Ins.)
  Operations Inspn. (Ins)*
  Ordnance Inspection*
  Production Control
  Safety Engineering
  Standard Costs & Budgetary Control
  Time & Motion Study*
Production Supvn. for SKF Industries
Production Supvn. Training (4 C.) (Ins)
Pyrometry*
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio Communications, Elements of*
Railway Signaling, Fundamentals of*
Refractories for the Iron & Steel Indus*
Safety Engineering (Inservice)*
SHIP CONSTRUCTION & DRAFTING: HULL
Ship Constr. & Drafting: Hull(Women)
Simple Structures, Theory of*
Solid & Gaseous Fuels, Analysis of*
Steam Power Plants*
Steel Castings (Inservice)
Steel, Heat Treatment of*
Steel, Making of*
Steel, Shaping of*
Steels: Selection, Treat. & Appl.
Standard Costs & Budgetary Control(Ins)
Stress Analysis
Structural Members & Connections*
Surveying & Mapping*
Tech. Chemical Analysis & Testing*
Thermodynamics
Time & Motion Study*
Tool Design*
Tool Engineering*
Topographic Map Drafting
Transformer Testing, Prin. of (Ins)*
Ultra-high Frequency Techniques
Unfired Press. Vessels, Design of(Ins)*
Wartime Accounting for Aircraft Production (Inservice)
Wartime Contracts & Procurement. (Ins)*

Swarthmore College, Swarthmore (Bryn Mawr, Chester, Glenolden, Lester, Philadelphia)

Biological Chemistry I (Inservice)*
Engineering Drawing & Math. (Ins.)*
Engrg. Drawing & Math. for Women
Governing & Control Systems (Ins)
Industrial Engineering: Time & Motion Study (Inservice)*
Industrial Engrg. Manufacturing Engineering - Meth. & Tool. (Ins.)
MAPPING & & PHOTOGRAMMETRY I
Mapping & Photogrammetry II
Marine Electrical Applications (Ins)*
Marine Electrical Engrg. I, II (Ins.)
Marine Electrical Funds. (Ins.)
Marine Power Plant Equipment (Ins.)
Marine Power Plant Instruments & Cycles (Inservice)
Marine Turbo-electric Power Plant Operation (Inservice)
Mechanics (2 Courses) (Inservice)
Metallurgy (Inservice)
Naval Architecture I, II (Ins.)
Orthographic Projection, Prin. of (Ins)
RADIO COMMUNICATION (Pre-radar)(Ins)
Ship Design & Construction (Ins.)
Steam Turbine Design, Elem. (Ins)
Strength of Materials (Inservice)
Thermodynamics, General (Ins.)
Welding Engineering (Ins.)*

Temple University, Philadelphia (Swarthmore; Camden, New jersey)

Chemistry of Metals (Inservice)
Foremanship Training (Inservice)
Physics & Related Mathematics
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio, Fundamentals of I*, II*
Traffic Control (Inservice)

University of Pennsylvania, Philadelphia (Chester, Eddystone; Claymont, Clayton, Delaware; Camden, New Jersey)

A. C. Circuit Theory
Acctg., Defense Contract (Ins.)*
Antenna Design & Trans. Lines (Ins.)
Cathode Ray Tubes; Theo. & Appl (Ins)
Chem. Engrg., Indus. Appl. of (Ins.)
Chem. Engrg., Unit Oper. of (Ins.)
Chem. Engrg. for Production Supvn. (Ins)
Communication Networks
Design Draftsmen, Audio Freq. for (Ins)
Design Draftsmen, Processing for (Ins)
Diesel Engines: Theory & Design (Ins)*
Electronics, Basic
Electronic Engineering
Engrg. Computations, Adv. (Ins.)
Engrg. Comp. & Machine Shop Theory(Ins)
Engineering Drafting (Ins.)
Engrg. Drafting, Adv. (Ins) (Women)
Engrg. Math., adv. (2 C.) (Ins.)
Flat Tool Templates, Elem. of (Ins)
Hull Structures (Ins.) (For Women)
Industrial Fire Protection (Ins.)
Industrial Hygiene: Engineering
Industrial Procurement
Inspection Methodology for Super. (Ins.)*
Inspection Reflections
Industrial Safety Training for Supervisors A, B (Ins.)
Inspection Engineering (Ins.)
Job Analysis (Inservice)
Machine Tool Design & Oper., Theory & Practice of (Inservice)
Machine Tools, Economic Util. of
Materials Handling
MATH. FOR BALLISTIC CALCULATIONS(Ins)
Math. for Electricians & Radiomen (Ins.)
Mechanical Engineering of Radio Apparatus (Inservice)
Metal Manufacturing Methods (Ins)
Metal Manufacturing Methods & Elements of Engrg. Drafting
Methods Engrg., Fund. of (Ins.)
Micro-wave Engineering (Ins.)
Micro-wave Wave Guides & Propagation (Ins.)
Motion & Time Study (Adv., Elem.)*
Non-sinusoidal Wave Forms (Ins.)
Numerical Analysis for Ballistic Computers (Ins.)
Office Management (Ins.)
Optics (Advanced): Instrument Design & Testing (Ins.)
Optics (Prin. of): with Applications to Instruments (Ins.)
ORDNANCE INSPECTION
(continued)

University of Pennsylvania (continued)

Personnel Management
Plant Layout
Plant Maintenance Management
Precision Inspection of Sheet Metal & Machined Parts (Ins.)
PRODUCTION CONTROL (Ins.)
Production Control & Expediting (Ins)
Production Engineering (2 C.) (Ins.)
Production Supervision
Quartz Crystal Engrg. (Ins.)
Radar Equipments (Ins.)
Radio Circuit Analysis (Ins.)
Radio Engineering (3 C.) (Ins.)
Radio Engineering for Mechanical Engineers (Ins.)
Radio Engineering Problems (Ins.)
Radio Instruments (Ins.)
Radio Laboratory, Advanced
Radio Quartz Crystals, Mnf. of (Ins.)
Radio Receivers, Circuit Considerations of (Ins.)
Radio Receivers, Design of (Ins.)
Radio Receiver Engineering (Ins.)
Radio for Students with Advanced Standing, Fund. of
Radio Test Equip., Theory & Oper.(Ins)
Radio Theory for Test Work (Ins.)
Safety Engrg. (2 Courses) (Ins.)*
Ship Elec. Install. (Ins.) (Women)
Ship Hull Draft. (Ins.) (For Women)
Ship Machinery (Ins.) (Women)
Ship Piping (Ins.) (For Women)
Shipbuilding: Matls. & Equip. A,B(Ins)
Strength of Materials & Foundry Practices (Ins.)
Supervisor Training (Ins.)
Supervisory Prob. in Handling Men
Supervisory Problems in Handling Workers (For Women)
Tool, Jig & Fix. Design (2 C.) (Ins.)
Ultra-high Frequency Aircraft Transceivers, Testing of (Ins.)
Ultra-high Frequencies, Gen. of (Ins)
Ultra-high Frequencies, Intro. to (Ins)
Ultra-high Frequency Techniques I, II
Ultra-high Frequency Techniques: Lab.
U. H. F. Techniques: Lectures
Ultra-high Frequency Electronics (Ins)
War Contract Accounting (Ins.)
War Contract Proc. & Acctg. (2 C.)(Ins)

University of Pittsburgh, Pittsburgh (East Pittsburgh, Erie, Johnstown)

Accounting for Mfg. Concerns (Ins.)*
Aerodynamics (Adv., Elem.)
Aircraft Drafting
Aircraft Engrg., Elements of
A. C. Equipment Testing (Ins.)
Applied Mechanics & Heat Power, Elem.
Auditing
Chemical Engrg. War Industries, Unit Plants Operation in (Ins.)
Chem. Fund. for War Workers (Ins.)
Chemical & Indus. Matls. Inspection
CHEMICAL & INDUS. MATLS. PRODN. (Women)
Chemistry of Powder & Explosives B
Concrete Design, Elementary
Cost Accounting*
Cost Analysis & Control
D. C. Equipment Testing
Draft. & Descriptive Geometry, Adv.
Electrical Equip., Maintenance & Test.
Elec. & Optical Anal. Control Methods
Electronic Circuits in Measurement & Instrumentation Control (Ins.)
Engineering Drawing (3 Courses)*
Engrg. Draw. & Applied Math. (2 C.)
Engrg. Drawing & Computations(Women)
Engrg. Drawing & Related Math.
Engrg. Methods & Production
Engineering Working Drawings & Computations
Evaluation of Protective Coatings
Evaluation of Solid Fuels
Food Testing & Control, Practical
Food & Water Inspection
Foremanship I
Highway Engineering (2 Courses)
Industrial Analytical Chemistry
Indus. Budgets & Budgetary Control
Industrial Chemical Analysis
Industrial Fuels & Combustion, Adv.
Industrial Laboratory Control
Industrial Power Piping
Industrial Safety Engrg. (2 C.) (Ins.)
Industry, Human Relations in
Internal Combust. Engine Fundamentals
Internal Combust. Engines & Testing
JUNIOR ENGINEER SUPPLEMENTAL (Women)
Labor Relations for Supervisors
(continued)

University of Pittsburgh (continued)

Liquid Steel Control Methods
Machine Construction & Design
Machine Draft. & Design, Elem.
Machine Drawing & Construction, Elem.
Machine & Structural Design, Elem.
Managerial Statistics
Manufactured Parts, Inspection of
Materials, Mechanical Inspn. of I, II
Materials, X-ray Testing of
Mechanics & Strength of Matls., Prac.
Metallurgical Analysis (2 Courses)
Metallurgical Inspection
Metallurgy, Foundry
Metals, X-ray Diffraction Anal. of
Microscopical Testing of Industrial Materials (Ins.)
Motion & Time Study
Patents in War Industries, Utiliz. of Technical Aspects of
Personnel Management & Supervision
Photogrammetry, Elements of
Power Piping, Advanced (Ins.)
Power Plant Engineering, Elem.
Process Control Instr. (2 C.) (Ins.)
Production Planning & Control (2 C.)
Prodn. Planning & Plant Layout, Elem.
Production Supervision
Quality Control (Ins.)
Radio & Electronics I, II
Radio, Fundamentals of II
Radio & Related Math., Fund. of
Shop Drawing & Computations
Spectroscopic Test. of Matls. (2 C.)
Spectroscopy, Spec. Prob. in Appl.
Standard Costs & Indus. Budg. Control
Steel & Timber Struc., Elem. Design of
Structural Design, Elem.
Structural Detail. & Computations
Switchboard Layout, Techniques of
Testing Human Abilities
Thermionic Control Instrument. (Ins.)
Time & Motion Study (2 Courses)
Time Study (2 Courses)
Time Study & Methods Analysis, Elem.
Tool Design I, II
Tool & Die Design (Adv., Elem.)
Tool Steels, Inspn. & Heat-treatment
Topographic Map Drafting
Topographic Mapping, Adv. (Ins.)
Ultra-high Frequency Techniques
Use of Surveying Instruments & Surveying Field Procedure

Villanova College, Villanova (Chester, Philadelphia)

Electronics, Fundamentals of
Engineering, Elements of*
Heat Power Engrg., Basic (Ins.)*
Junior Engineering I*
Machine Design, Elements of
Marine Power Plant Calculs. (Ins.)
Physical Metallurgy (Adv., Elem.)
Power Plants, Math. & Chem. of (Ins.)*

Wilson College, Chambersburg
Mechanics & Electricity, Fund. of

RHODE ISLAND

Brown University, Providence (Newport)

Chem. Analysis, Prac. (For Women)
Chem. Quantitative Analysis - Instrumental Methods (Ins.)
Concrete Struct., Anal. & Design of
Electrical Engineering Lab. (Ins.)
Engineering Draw., Fundamentals of
Hydraulics (Ins.)
Indeterminate Structures (Ins.)
Jig, Fix., & Tool Design (Ins.)*
Machine Design, Analytical (Ins.)
Machine Drafting (Inservice)
Math., Elem. (Ins.)
MECHANICS: ADV. INSTRUCTION & RESEARCH
Mechanics & Strength of Matls., Anal.
Metallurgy, Elementary (Ins.)
Metallurgy for Inspectors
Optical Parts & Systems, Design & Production of
Screw Machine Tool & Cam Design (Ins.)
Structural Analysis & Design (Ins.)
Vibrations, Theory of (Ins.)

Rhode Island State College, Kingston (Newport)

Metallurgy of Iron & Steel (Ins.)

SOUTH CAROLINA

The Citadel, Charleston

Cost Acctg. for Production (Ins.)
Electricity, Essentials
Engineering Drawing, Advanced (Ins.)
Engineering Mathematics (2 C.) (Ins.)
Higher Mathematics (Ins.)
Industrial Accounting (Ins.)
Industrial Safety Engineering (Ins.)
Naval Architecture (Adv., Elem.)(Ins)
RADIO COMMUNICATION (Pre-radar)(Ins)
Structural Design (Ins.)

Clemson Agricultural College, Clemson (Anderson, Easley, Greenville, Greenwood, Greer, Seneca, Spartanburg, Walhalla)

Bldg. Construction & Constrn. Methods*
Engineering Drafting*
Radio, Fundamentals of I*, II
Safety Engineering (Ins.)*
Surveying & Mapping*

Colored Normal, Industrial Agricultural & Mechanical College, Orangeburg

Analytical Chemistry
Engineering Drawing
Industrial Accounting
Organic Analysis: Qualitative
Personnel Admin. & Labor (Ins.)
Surveying, Elementary

Furman University, Greenville

Manufacturing Acctg. (Ins.)

University of South Carolina, Columbia (Bath)

Aircraft Drafting (Ins.)
Aircraft Engine Inspection
Aircraft Inspection
Aircraft Radio & Elect. Equipment
Building Inspection (Ins.)
Cost Accounting (Ins.)
Engineering Drawing
Engineering Fundamentals
Industrial Acctg. & Mngmt. (Ins.)
Industrial Statistics (Ins.)
Personnel Management (Ins.)
Plane Surveying & Topographic Drafting (Ins.)
Radio, Fundamentals of I, II
Safety Engineering (Ins.)*
Traffic Engineering

SOUTH DAKOTA

South Dakota State College, Brookings (Sioux Falls, Vermillion)

Combination, Mechanism Machine Design
Engineering Drawing
Radio, Fundamentals of I*, II*

TENNESSEE

Fisk University, Nashville

Qualitative Organic Analysis

University of Tennessee, Knoxville (Alcoa, Bristol, Chattanooga, Cleveland, Johnson City, Kingsport, Memphis, Milan, Murfreesboro, Nashville, Rogersville)

Accounting, Advanced (Ins.)
Airport Design (Ins.)
A. C. Circuits
Auditing (Ins.)
Chem. Anal., Indus. Methods of
Chemical Engrg. Prodn. Supvn. (Ins.)
Chemistry, General & Analytical
Civil Engineering Drawing
Contracts & Specifications
Cost Accounting*
D. C. Machinery, Elem. of (Ins.)
(continued)

University of Tennessee (continued)

Descriptive Geometry (Inservice)
Descriptive Geometry & Applied Orthographic Projection (Ins.)*
Electric Circuits, Elem. (Ins.)
Electric Communications (Ins.)
Electric Instruments & Relays (Ins.)
Electrical Lab. Experiments, Elem. (Test Lab.) (Ins.)
Electrical System Planning
Electricity, Elem. of
Engineering Drawing (2 Courses)*
Engineering Drawing (2 C.) (Ins.)
Engineering Drawing (For Negroes)
ENGINEERING FUND. (Jr. Engr. Supp.)
Engineering Mathematics (Ins.)*
Engrg. Math. applied (Elem.) (Ins.)
Engineering Mechanics, Elementary
Explosives Chemistry (Ins.)
Foremanship & Supervision (Ins.)
Highway Design II (Ins.)
Hydraulics, Elementary
Hydraulic Structures of Hydro-electric Developments I, II (Ins.)
Industrial Acctg. (3 C.) (Ins.)*
INDUSTRIAL ACCTG. & OFFICE MGMT.
Industrial Management (Ins.)
Indus. Methods of Chem. anal. (Negroes)*
Indus. Methods of Chem. anal. (Women)*
Industrial Safety Engrg. (Ins.)*
Industrial Statistics (Ins.)
Internal Control & Audits (Ins.)
Laboratory Technology
Machine Design (Ins.)
Maintenance of Substation Equip. & Transmission Lines
Math. for High School Teachers
Math. for High School Teachers (Negroes)
Math. for Teachers (Corres.)
Mechanics (Adv., Elem.)
Metering, Relaying & Local Control, Advanced (Inservice)
Office Management (3 Courses) (Ins.)
OPERANCE INSPECTION
Personnel Mngmt. (2 C.)(Ins.)(Negroes)
Physics, Elementary
Physics of Electricity & Magnetism (Ins)
Physics for High School Teachers
Physics for H. S. Teachers (Negroes)
Physics for Teachers (Correspondence)
Plastics (Ins.)
Power Engineering, Elem.
Power System Operations (Ins.)
Protective Relays & Indicating Meters, Application of (Ins.)
Radio Communications (Pre-radar)
Radio Technicians II*
Radio Technicians (Negroes)
Radio Technology I*
Reinforced Concrete Design (Ins.)
Safety Engrg., Advanced (Ins.)
Strength of Materials
Structural Steel Design (Ins.)
Supervisory Training (Negroes)
Surveying, Advanced (Ins.)
Surveying & Mapping (Negroes)
Symmetrical Components (Ins.)
Time & Motion Study
Transmission & Substation Design (2 C)
Transportation, Elements of (Ins.)
Trigonometry (Ins.)*
Tool Engrg. & Machine Design (Ins.)
Ultra-high Frequency Techniques (Ins)
Utility Accounting
Wage Incen. Methods in Mer Trdn. (Ins)

Vanderbilt University, Nashville

Aeronautics
Chemical Engrg. for Prodn. Supvn.
Descriptive Geometry
Engineering Drawing (Adv., Elem.)
Engineering Fund. (Jr. Engr. Sup.)
Industrial Accounting (Inservice)
Industrial Electronics
Industrial Purchasing
Machine Draw. & Elementary Design
Mechanics & Strength of Materials
Plane Surveying, Theory of (Ins.)
Production Management (Ins.)
Radio, Fundamentals of I, II
Safety Engineering
Time & Motion Study (Ins.)
Tool Engineering
Transportation Management (Ins.)

TEXAS

A. & M. College of Texas, College Station (At approximately 45 centers in Texas)

Accounting (3 Courses)*
Aeronautical Engrg. Terminology (Ins)*
Aircraft Construction Practices
Aircraft Drafting*
Aircraft Drafting - Pre-factory*
Aircraft Factory Liaison Prac. (Ins)*
Aircraft Fuel, Oil & Hydraulic Systems*
Aircraft Instruments
Aircraft Materials Inspection, Adv.)
Aircraft Materials & Processes
Aircraft, Plywood in*
Aircraft Prodn. Prac., Elem. (Ins.)*
Airc. Structures (Structures Personnel)
Aircraft Tool Drafting*
Airc. Tool, Jig & Fixture Design*
Aircraft Tool Planning (2 Courses)*
Aircraft Tool Proofing*
Aircraft Tooling*
Airc. Weight & Balance Control*
Airplane Structures, Elementary*
Assembly Practices (3 Courses)*
Assembly Jig Design for Aircraft*
Assembly Jig Drafting (Aircraft)*
Auditing, Internal (Inservice)
Camp & Emergency Sanitation
CAMP SANITATION
Chem. Engineering, Principles of
CONSTRUCTION ENGINEERING, ADV.
Contracts & Specifications*
Cost Acctg. (2Courses) (Ins.)*
Drafting for Electrical Engineers
Engineering Appl. of Trig. (Ins.)*
Engineering Drafting*
ENGINEERING DRAWING (2 Courses)*
Engineering Drawing (2 Courses*
Engineering Drawing (Negroes)*
ENGINEERING FUND. (Jr. Engineer)(Women)
Engineering, Intro. Problems in*
Engineering Metallurgy*
Foremanship & Supervision (Ins.)*
Gov't Contract Procedure & Acctg (Ins)
Grinding Machine Practices, Adv.*
Hydraulics, Elementary*
Hydrology
Industrial Accounting*
Industrial Mathematics*
Industrial Mngmt., Prin. of (Ins.)*
Industrial Safety (Ins.)*
INTERNAL COMBUSTION ENGINES
Jig Design, Elementary
Jig & Fixture Construction (2 C.)
Machine Detail*
Machine Detail & Tool Design*
Machine Drawing (2 Courses)*
Machine Drawing & Shop Math., Adv. *
Management Under War Conditions I, II
Map Drafting*
Materials Inspection
Materials Inspection (For Women)
Mechanics, Elementary*
Mechanics, Elem. (Negroes)*
Mechanics of Materials*
Metallurgy & Heat Treating*
Personnel Administration
Personnel Admin., Case Studies in (Ins)
Personnel Management, Adv. (Ins.)
Petroleum Refining (Ins.)*
Petroleum Refining Process Design(Ins)
Photogrammetry
Piping Drawings & Layouts
Plant Protection Mngmt (Ins.)*
Plastics: Properties & Processes*
Power & Electric Circuits (Ins.)*
POWER & HEATING ENGINEERING*
Pre-flight Inspection*
Procurement & Stores (Ins.)
Production Planning & Matls.Contl.(Ins)
RADIO COMMUNICATIONS (Ins.)*
Radio Communication, Fund. of*
Radio Commun., Fund. of (Negroes)*
Radio Comm. & Electron. DevicesI*,II*
RADIO ENGINEERING*
Radio Engrg., Fund. of (Negroes)*
Reinforced Concrete Design (Ins.)
Sanitary Engrg. Appl. to Wartime Con.
SANITARY ENGRG. FOR MALARIA CONTROL
Sheet Metal Draft. & Template Desn.*
Ship Hull & Engrg. Drafting*
Ship Production
Ship Prodn. & Oper., Electricity in
Statistical Methods
Strategic Material Conservation
Structural Anal. & Adv. Structural Detailing (Ins) (For Negroes)
Structural Drafting*
Surveying (Inservice)*
SURVEYING & MAPPING*
Surveying & Mapping*
Time & Motion Study (2 C.) (Ins.)
(continued)

A. & M. College of Texas (continued)

Tool Control*
Tool Cost Estimating, Elementary*
Tool, Jig & Fixture Construction*
Tool, Jig & Fixture Design (2 C.)*
Tool Planning & Process.: Materials*
Tool Trouble Shooting*
Ultra-high Frequency Techniques
Welding, Technical Elements of*
Work Simplification

Baylor University, Waco (Temple)

Accounting Control, Advanced
Accounting, Managerial Uses of (Ins.)
Cost Accounting, Advanced
Cost Control
Industrial & Governmental Procure.
Labor Rel., Problems in (Ins.)
Office Management*
Personnel Admin. & Supervision

East Texas State Teachers College, Commerce

Industrial Accounting

Hardin-Simmons University, Abilene (Cisco)

Chemistry of Sanitation
Industrial Control Through Acctg.
Industrial Statistics

North Texas State Teachers College, Denton (Gainesville, Kilgore, Sherman)

Chemistry, Analytical*
CHEMISTRY, ORGANIC
Chemistry of Synthetic Rubber
Electricity & Magnetism*
Mathematics, Refresher*
Physics, Refresher*

Rice Institute, Houston

Calculus, Diff. & Integral (Ins.)
Electronics & Radio
Industrial Drafting
Indus. Drafting & Elem. Design, Adv.
Mathematical Analysis
Municipal & Indus. Water Treatment
Naval Construction Drawing
Plane Surv. with Field & Office Prac.
Radio Transmitters & Receivers

Southern Methodist University, Dallas (At approximately 20 centers in Texas)

Aerial Bombardment Protection
Air Condition., Vent. & Refrig. (Ins)
Aircraft Drafting (2 Courses)*
Aircraft Engine Parts Inspection
Aircraft Materials Inspection
Cam & Fixture Designs for Automatic Screw Machines (Ins.)
Cost Analysis
ENGINEERING DRAWING
Engineering Drawing*
ENGINEERING FUND. (Jr. Engr. Supp.)
Factory Accounting (Ins.)
Flight Test Inspection
Foremanship & Supervision (2 C.) (Ins)
Foremanship Training (Ins.)
Government Contracts Procedure (Ins.)
Industrial Accounting (2 Courses)*
Industrial Auditing*
Industrial Charts & Graphs
Industrial Chemistry
Industrial Labor Relations (Ins.)
Indus. Management, Adv. (Ins.)
Indus. Personnel Mngmt. (Ins.)
Industrial Safety (2 Courses)*
Industrial Safety (Negroes)
Internal Combustion Engine Testing
Machine Drawing, Advanced
Materials Testing & Inspection
Math. for Engineers I, II
Math. for High School Teachers
Mechanical Drawing
Municipal Sanitation, Fund. of
Office Management & Practices
(continued)

Southern Methodist University (continued)

Personnel Admin., Psychological Techniques in (Inservice)
Photogrammetry, Elementary
Plane Table Topography
Production Control (Ins.)
RADIO COMMUNICATION (Pre-radar) (Ins)
Radio, Fundamentals of I, II
Structural Detailing (Ins.)
Time & Motion Study
Topographic Map Drafting
Transport. & Traffic Management (Ins.)
Ultra-high Frequency Techniques
Wartime Purchasing & Inventory Control (Inservice)

Texas Christian University, Fort Worth

Cost Accounting, Advanced
Graphic Presentation for War Indus.
Industrial Analyses
Industrial Acctg. for War Production
Industrial Purchasing (Ins.)
Industrial Relations
Industrial Statistics & Control
Management & Labor Relations
Office Supervision for Women
Radio, Fundamentals of I, II

Texas College of Arts & Industries, Kingsville (Alice, Brownsville, Corpus Christi, Falfurrias, Harlingen, Laredo, Victoria, Weslaco)

Chemical Engineering Processes
Engineering Drawing*
Industrial Chemistry
Industrial Safety Engineering (Ins.)
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio, Fundamentals of I*, II*
Surveying*

Texas College of Mines & Metallurgy, El Paso

Analysis & Control of Water
Electrical Circuits & Machines
Industrial Accounting
Personnel Management (Ins.)

Texas Technological College, Lubbock (Abilene, Amarillo, Big Spring, Brownwood, Fort Worth, Midland, Pampa, San Angelo, Wichita Falls)

AIRCRAFT DRAFTING, PRE-FACTORY*
Engineering Drawing*
Engineering Mechanics
Engrg. for Purchasers, Essen. of
Industrial Safety Engineering (Ins)*
Machine Drawing
MATH. FOR HIGH SCHOOL TEACHERS
Production Control
Production Engineering I
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio Engineering, Fund. of I*, II*
Strength of Materials
Time & Motion Study
Ultra-high Frequency Techniques

University of Houston, Houston

Accounting, Intermediate
Budgeting
Chemical Laboratory Techniques
Chemistry: Analytical Techniques Appl. to Ferrous Metals
Cost Accounting (2 Courses)
Employment Tests (Ins.)
Foreman Training (Ins.)
Industrial Accounting
Industrial Psychology (Ins.)
Industrial Traffic Management (Ins.)
Office Organ. & Management
Petrol. Chem. Including Butadiene

University of Texas, Austin (At approximately 25 centers in Texas)

Aerial Photography, Interpret. of*
Aerodynamics, Elementary
AERONAUTICAL ENGINEERING
Air Condit., Refrig. & Ventilation
Aircraft Communication Systems
Aircraft Descriptive Geometry
(continued)

University of Texas (continued)

AIRCRAFT DRAFTING (Inservice)
Aircraft Drafting, Advanced
Aircraft Drafting, Elem. (For Women)
Aircraft Drafting & Materials
Aircraft Electrical Systems*
Aircraft Flight Inspection
Airc. Hydraulic Systems, Elem. of
Airc. Hydraulic Systems, Inspn. of
Aircraft Instruments*
Aircraft Lines Lofting
AIRCRAFT LOFTING (Ins.)
Aircraft Lofting*
Aircraft Template Development*
Airc. Time & Matls. Conservation (Ins)
Aircraft Tool Planning
Aircraft, Wood Technology of
Architectural Engrg. Drawing (2 C.)
ARCHITECTURAL ENGRG. DRAW., ELEM. OF
Chemical Engineering for Production Supervisors (Ins.)
Chemical Laboratory Techniques
Chemical Lab. Techniques (Women)
Control of Water & Sewage Treatment
Elec. Circuits, Mach. & Electronics*
Electrical Power Distribution & Industrial Control
Emergency & Camp Sanitation
ENGINEERING AID TRAINING
ENGINEERING ASPECTS OF MALARIA CONTROL
ENGINEERING DRAWING (2 Courses)*
Engineering Math. for Indus. (Ins.)*
Engrg. Tech. Assistant Training*
Geological Interpretation Through Geophysical Methods (Ins.)
INDUSTRIAL ACCIDENT PREVENTION
Industrial Chemical Processes*
Indus. Engrg. Math. & Physics
Industrial Safety Engineering*
Industrial Supervision (Ins.)*
Industrial Surveying
JR. ENGINEERS, FUNDAMENTALS FOR
Management & Personnel (Ins.)
Marine Elect. Circuits & Machines*
Marine Electrical Drafting
Math. for Aeronautical Engrs. (Ins.)
Math. for High School Teachers
Math. for Teachers (Corres.)
Meas., Theory & Prac. of (Ins.)
Naval Architecture (2 Courses)
Non-ferrous Metallurgy
Office Management*
Personnel Management (2 Courses)*
Petroleum Refining, Fund. of
Petroleum Testing
Physics for Teachers (Corres.)
Production Engineering (Ins.)
Production Metallurgy
Pumps & Compressors
RADIO COMMUNICATION (Pre-radar)(Ins.)
Radio, Elements of*
Radio, Fundamentals of I*, II*
Refrig. Engineering (Ins.)
Ship Drafting (2 Courses)*
Ship Drafting (Women)
Small Airc. Tools, Prin. & Oper. of
Soil Mechanics - Foundations*
Soil Stabilization (Ins.)
Strength of Materials*
Structural Design, Elementary
Ultra-high Frequency Techniques
Weld. Metallurgy & Ship Constrn. (Ins.)

UTAH

Brigham Young University, Provo

Industrial Accounting
Industrial Office Management
Industrial Personnel Problems
Industrial Psychology

University of Utah, Salt Lake City (Logan, Ogden, Price, Provo)

Cartography, Elementary
Cost Accounting (Ins.)
Drafting*
Efficiency Management (Personnel)
Engineering Mechanics, Elem. of
Explosives (Adv., Elem.) (Ins.)*
Heat Treament of Metals
Industrial Accounting
Indus. Safety Engineering (Ins.)*
Industrial Statistics
Machine Design (Ins.)
Math. for Engineers (Ins.)
Office Management (Ins.)
Ore Dressing
Personnel Admin., Appl. (Ins.)
(continued)

University of Utah (continued)

Personnel Management*
Personnel Mngmt., Psychology of (Ins)
Personnel Problems (Ins.)
Production Management (Ins.)
Production Supervision (Ins.)
Purchasing
Radio, Fundamentals of I, II*
Simple Structures, Theory of
Surveying
Ultra-high Frequency
Water Supply & Sanitation (Ins.)

Utah State Agricultural College, Logan (Ogden, Salt Lake City)

Cartography, Elementary
Engineering Drawing
Metals & Heat Treament (Ins.)
Photogrammetry
Radio, Fundamentals of

VERMONT

Norwich University, Northfield (Barre, Montpelier, Poultney, Rutland, St. Johnsbury)

Factory Foremanship (Ins.)
Indus. Mngmt. & Safety Engrg. (Ins.)
Machine Drawing (2 Courses)
Production Supervision
Radio, Fundamentals of II*
Shop Drawings & Measurements I, II

VIRGINIA

Hampton Institute, Hampton

Cost Accounting for Contractors
Engineering Drawing
Engineering Mathematics (Essentials of Trigonometry) (Ins.)
Organic Chemistry
Radio Operating Science
Specifications & Estimating
Structural Detailing

University of Richmond, Richmond

Business Statistics (Ins.)
Chemistry, General
Chemistry, Organic
Corporation Accounting (Ins.)
Cost Accounting (Ins.)
Industrial Management (Ins.)
Industrial Psychology (Ins.)
Manufacturing Accounting (Ins.)
Math. for Radio Technicians I, II(Ins)
Mathematics for Teachers
Office Management (Ins.)
Personnel Cooperation (Ins.)
Personnel Management (Ins.)
Personnel Testing (Ins.)
Physics for Radio Technicians (Ins.)
Physics for Teachers
Quantitative Anal., Elem. (Ins.)
Qualitative Organic Analysis
Radio, Fundamentals of I, II (Ins.)
Train. Foremen & Supvrs. I, II(Ins.)

University of Virginia, Charlottesville (Arlington, Hampton, Newport News, Norfolk, Portsmouth, Richmond, Roanoke, Waynesboro, Winchester)

Aerodynamics (2 Courses) (Ins.)
Aerodynamics & The Airplane I, II (Ins)
Aerodynamic Problems, Application of Physics to (Ins.)
Aeronautical Engineering, Compressibility in (Ins.)
Aeronautical Probs., Application of Physics to (Inservice)*
Aerc., Cowling & Cooling of (Ins.)
Aircraft Propellers (Ins.)
Air., Stability & Control of (Ins.)
Aerc., Thermodynamics & Fluid Mechanics Applied to (Ins.)
Airfields, Design of (Ins.)
Airfoil Development (Ins.)
(continued)

University of Virginia (continued)

Bombardment Protection (Inservice)*
Chemical Equipment Design (Ins.)
Chemical Engineering, Fund. of II
Concrete & Steel (Ins.)
Electrical Engrg., Fund of I, II (Ins)*
Engineering Computations & Slide Rule (Ins.)*
Engineering Drawing I*, II*
Flight Test Techniques
Fourier's Series, Structural Application of (Ins.)
Industrial Safety Engrg. (2 C.) (Ins.)
Mathl. Analysis, Intro. to (Ins.)
Mechanics & Strength of Materials I, II
Motion Study (Ins.)*
Personnel Management
Ship Engrg. Drafting (4 Courses)
Ship Hull Drafting I, II (Ins.)
Structural Principles in Design, Practical Applications of (Ins.)
Structures, Adv. Theory of
Technical Report Writing (Ins.)
Time Study (Ins.)
Wind-tunnel Test. Techniques (Ins.)

Virginia Military Institute, Lexington (Lynchburg, Waynesboro)

Industrial Safety Engineering
Radio Technician Train. Course II

Virginia Polytechnic Institute, Blacksburg (Bristol, Harrisonburg, Martinsville, Norfolk)

Aircraft Drafting & Detail Design, Engineering Principles of I
Aircraft Electricity I, II III
Aircraft Inspection (Ins.)
Airc. Power Plants, Engineering Principles & Applications of
Aircraft Sheet Metal Design, Adv.
Cost Accts. (2 Courses) (Ins.)
D. C. Electricity, Principles of
Engineering Aerial Surveying
ENGINEERING DRAFTING (Women)
Engineering Drafting I, II, III
ENGRG. LAYOUT & COMPUTATIONS
Engrg. Mathematical Analysis I
Engrg. Mathematics I, II (Ins.)
Engrg. Mechanics & Resistance of Matls
Engineering Structural Drafting
ENGINEERING SURVEYING
Industrial Accounting
Industrial Safety Engineering (Ins.)
Industrial Super. & Management (Ins.)
Physics, Refresher
Radio, Fundamentals of I*, II*
Radio, Principles of II
Radio Technology I, II
Refrigeration & Air Conditioning
Reinforced Concrete & Foundations I
Safety Engineering
Ship Production, Practical
Structural Engineering
Surveying & Topo. Mapping I, II
Topographic Mapping, Engineering Applications of
Ultra-high Frequency Techniques

Virginia State College for Negroes, Ettrick

Accts., Corporation & Manufacturing
Chemistry for Technicians
Personnel Administration
Physics, General
Radio, Fundamentals of
Statistics, Applied General

William & Mary College, Williamsburg (Yorktown)

Industrial Accounting*
Industrial Management*
Industrial Statistics*
Personnel Management*

WASHINGTON

State College of Washington, Pullman (Spokane)

Physical Metallurgy of Light Metals
Safety Engineering

University of Washington, Seattle ((Bremerton, Centralia, Chehalis, Longview, Port Townsend, Tacoma)) -

Accounting, Advanced
Aerodynamics ((2 Courses))
Aircraft Descriptive Geometry
AIRCRAFT MATLS. INSPECTION FOR WOMEN
Aluminum & Its Alloys
Blueprint Reading ((Ins.))
Cost Analysis ((Ins.))
Drafting Room Practices ((Ins.))
Electrical Engrg., Fund. of
Engineering Mathematics ((Ins.))
Gov't. Contract Problems ((Ins.))
Industrial Auditing ((Ins.))
Indus. Organ. & Mngmt. ((Ins.))*
Industrial Safety ((Ins.))*
Indus. Traffic Control ((Ins.))
Iron & Steel ((Ins.))
Marine Electrical Engrg. ((Ins.))
Marine Engineering ((Ins.))
Math. for Teachers ((Correspond.))
Mechanical Drawing
Metallography
Naval Architecture
Naval Arch. & Ship Drafting ((Ins.))*
Naval Ships, Ventilation of ((Ins.))
Naval Vessels, Hull Fittings of ((Ins.))
Office Management
OFFICE MANAGEMENT FOR WOMEN
Personnel Administration ((Ins.))
Radio Amplifiers & Special Circuits
Radio Equip., Design & Oper. of
Radio, Fundamentals of I
Radio Technician Course I, III
Radio Techniques III
Sanitary Engrg. Design ((Ins.))
Ship Lofting ((Ins.))
Ship Struc., Stress Anal. of ((Ins.))
Structures, Mechanics of
Ultra-High Frequency Techniques
Welding Tech. for Supervisors ((Ins.))

WEST VIRGINIA

West Virginia State College, Institute ((Charleston))

Math. & Physics for Teachers, Industrial & Applied
Office Management
Supervisory Training

West Virginia University, Morgantown ((In approximately 20 centers in West Virginia))

Chemistry ((Ins.))*
Chem. of Powder & Explosives ..., I
Civil Engineering III, IIII ((Ins.))
Drawing & Design I*, II*
Electrical Design
Electrical Engrg. I*, II* ((Ins.))
Empirical Design*
Engineering Auditing ((Ins.))*
ENGINEERING FUNDAMENTALS ((Ins.))
Engineering Mathematics, Applied I*, II* ((Ins.))
Geometrical Optics ((Winter))
Industrial Accounting ((Ins.))
Industrial Instruments
Industrial Organization ((Ins.))*
Industrial Safety Engrg. ((Ins.))*
Kinematics
Machine Design ((Ins.))
Mathematics, Advanced ((Ins.))
Mechanics, Applied I*, II*
Metallurgy I*, III
Mining Engineering ((Ins.))*
Petroleum Engrg. Chemical*
Production Supervision, Human Problems in ((Ins.))*
RADIO COMMUNICATION ((Ins-credit))((Ins.))
Radio, Fundamentals of I*, II*
Statistics
Strength of Materials
Struct. Design, Elem. ((Ins.))*
Surveying I*, II*
Tests & Inspection I*, II*
Time Study ((Ins.))*
Ultra-High Frequency Techniques

WISCONSIN

Marquette University, Milwaukee

Engineering Drawing I, II
Indus. Mngmt. for Foremen (Ins.)
Machine Design
Mapping & Cartography
MATERIALS, INSPECTION & TEST. OF
Mechanics, Fund. of I
Personnel Management (Ins.)
Production Engineering
Radio, Fund. of I
Tool Design I, II
Safety Engineering

University of Wisconsin, Madison (at approximately 60 centers in Wisconsin)

Business & Industry, Psychological Testing in (Ins.)
Acctg., Intermediate I*, II*
Auditing I
Chemistry (2 Courses)*
Chemistry of Explosives*
Cost Control for War Industries
Descriptive Geom. for Sheet Metal Workers
Die Design & Metal Stampings
Diesel Engines
DIESEL ENGINE OPR., THEORY & PRACTICE OF (Ins.)
Diesel Engineering*
Elasticity, Applied (Ins.)
Electrical Controls: Their Circuits & Diagrams (Ins.)
Electricity, Fundamentals of
Electronics (Inservice)
Engineering Calculus*
Engineering Drawing*
Engrg. Mathematics (2 C.) (Ins.)*
Engineering Physics*
Engrg. Problems, Prac. I, II (Ins.)
Engrg. Prodn. Planning & Control*
Engineering Production Supervision*
Engineering Sketching & Advanced Blueprint Reading*
Engrg., Vibration Prob. in (Ins.)
Factory Management (Ins.)
Fluid Mechanics*
Freehand Sketching & Advanced Blueprint Reading
Fuels & Combustion*
Gov't. Contracts & Acctg. Proc. I, II
Gray Iron Foundry Metallurgy, General
Heat-power Engineering (Ins.)
Heating, Vent., & Air Conditioning I, II
Industrial Accounting
Industrial Blueprint Reading*
Industrial Cost Acctg. I, II (Ins.)*
Industrial Personnel Problems
Indus. Psychology, Adv. I, II (Ins.)
Indus. Organ. & Management (Ins.)
Indus. Relations, Psychology of (2 Courses) (Ins.)*
Industrial Safety Engrg. (2 C.)*
Indus. Supervision (Ins.)
Jig & Fixtures, Design of I, II
Jr. Engineer Supplemental
Machine Design I
Machine Shop Inspection*
Machine Shop Methods for Design Departments (Ins.)*
Managing Personnel (Ins.)*
Math. for Electricians & Radiomen
MATH. FOR H. S. TEACHERS
Math. for High School Teachers
Math. for Teachers (Corres.)
Mechanics, Elementary I, II
Mechanism (Ins.)
Metallurgy
Metals & Their Alloys*
Metals & Their Alloys, Non-ferrous
Office Management (Ins.)*
Personnel Management*
Physics for H. S. Teachers*
Physics for Teachers (Corres.)
Plant Protection for War Indus. (Ins.)*
Precision Instruments & Measurements
Production Planning & Control
Radio, Fund. of I*, II*
Radio Technician Training (2 C.)
Refrigeration
Safety Engrg. for Training (Ins.)
Sheet Metal Drafting
Steel Foundry Metallurgy, Gen. (Ins)
Strength of Materials
Stress Analysis of Machine Parts
Structural Theory I, II (Ins.)
Time & Motion Study (3 C.) (Ins.)*
Tools & Dies*
Topographic Map Drafting*
Traffic Mngmt.: Shipping Procedure (Ins)
Ultra-high Frequency Techniques
Wood Technology*

WYOMING

University of Wyoming, Laramie (Casper, Cheyenne, Rock Springs, Sheridan)

Drafting, Technical (2 Courses)*
Hydraulics
Industrial Safety Engineering (Ins.)
Mechanics, Applied
Radio Communication (2 Courses)*
Shop Processes, Gages, Measuremts.
Strength of Materials
Surveying, Elementary
Trigonometry, Basic*

PUERTO RICO

University of Puerto Rico, Mayaguez

Arc Welding
Engineering Drawing
Fuels & Lubricants, Prac. Anal. of
Highway Engrg., Practical
Illumination Design & Interior Wiring
Radio, Fundamentals of
Surveying, Practical

ESMWT-Misc. 148

latest set
4 separates

Federal Security Agency
U. S. OFFICE OF EDUCATION
Washington

ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING

Supplement to List of Approved Courses (ESMWT-Misc. 119)

Supplement Period February 1, 1943 Through March 31, 1943

This supplement presents titles of new ESMWT courses approved within the supplement period. For the List of Approved Courses for the period July 1, 1942 through January 31, 1943, refer to ESMWT-Misc. 119.

CAPITALS indicate FULL-TIME courses; lower case, part-time. The city listed is the location of the institution. Enrollment in courses designated as "Inservice" is restricted to persons who are employed in appropriate war activities. Further information about any course - content, prerequisites, time and place of next section, etc. - must be obtained from the respective institutions.

ALABAMA

Alabama Polytechnic Institute, Auburn

Aircraft Electrical Systems
Aircraft Sheet Metal Structure
Chemical Calculations, Industrial
Chemistry, General & Analytical
Engineering Physics
Mathematics for Engineers, Adv. (Ins.)
Radio, Fundamentals of I, II (Negroes)
Spectrographic Analysis, Intro. (Ins.)
Spinning Room Management

University of Alabama, University

AIRCRAFT INSTRUMENTS (2 C.) (Ins.)
Aircraft Materials Inspection
AIRCRAFT POWER PLANTS (Inservice)
College Physics, Refresher Course in
Electrical Engineering Aboard Ship
Electrical Welding Equipment, Theory & Maintenance of (Inservice)
ENGINEERING FUND. (Jr. Engr. Supp.)
Engineering Math. with Prob. (Ins.)
Engineering Problems (Inservice)
Geometric Ship Design (Ins.)
Hull Design & Construction Principles
Management, Industrial
Marine Steam Engineering
Mathematics for Teachers
Personnel Mngmt. for Supervisors (Ins.)
Personnel Supervision at TVA (Ins.)
Physics for Teachers
PLANT PROTECTION SUPERVISION
Pyrometrics
Radio Technology (Abbreviated)
Structural Detailing, Elementary
Structural Steel Design
Topographical Drafting III
Work Simplification in the Shop

ARKANSAS

University of Arkansas, Fayetteville

Advanced Topographic Drafting (Ins.)

CALIFORNIA

California Institute of Technology, Pasadena

Aircraft Fitting Analysis (Inservice)
Aircraft Drafting, Fund. of (Ins.)
Aircraft Matls. & Parts Inspn. (Ins.)
Aircraft Mathematics, Fund. (Ins.)
Aircraft Perspective Sketching (Ins.)
Airc. Power Plant Installation (Ins.)
Aircraft Production Sketching (Ins.)
Aircraft Stress Analysis (Inservice)
Electronics, Introductory
Photo-tracing, Advanced Scientific Specialties of (Ins.)
Photo-tracing, Chemistry & Physics of II (Ins.)
Radio III
Tool Engineering, Advanced (Ins.)

San Jose State College, San Jose

INDUSTRIAL ANALYTICAL CHEM. FOR WOMEN

Stanford University, Stanford University

AIRCRAFT DRAFTING & ENGINEERING DRAFTING & TECHNICAL CALCULATIONS
Electronic Equip. Testing, Fund. (Ins.)
INDUSTRIAL ACCOUNTING
INDUSTRIAL MANAGEMENT, FUND. OF
Industrial Psychology
Job Anal. & Work Simplification (Ins.)
Management Accounting II
MANAGEMENT PRACTICES IN WAR INDUSTRY
Manning Tables & Replacement Schedules, Preparation of (Ins.)
Mathematics for Secondary School Teachers, Refresher Course in
Personnel Problems, Current (Ins.)
Production Control
Ship Outfitting Procedures for Supervisors (Ins.)
Tensor Calculus
Wage & Salary Determination

University of California, Berkeley

Aerodynamics, Applied
Aircraft Design, Metals in (Ins.)
Aircraft Design, Plastics in (Ins.)
Aircraft Design Sketching
Aircraft Detail Design Checking (Ins.)
AIRCRAFT ENGINEERING LOFTING
Aircraft Instrumentation (Ins.)
AIRCRAFT LOFTING
Aircraft Machine Design (Ins.)
Aircraft Materials & Processes
Aircraft Plastics, Introduction to
Aircraft Tooling Inspection (Ins.)
Aircraft Wood Fabrication for Tool Designers (Ins.)
Airplane Design, Intro. to (Ins.)
Asphalt Paving Matls. & Construction
Calculus for Engrg. Personnel (Ins.)
CHEMICAL LABORATORY TECHNIQUES
Chemical Processes of Petroleum Refinery Engineering
Concrete Making & Inspection
Control of Production
Descriptive Geometry (Ins.)
Design Sketching
Die Design I, II
Die Design Laboratory I, II
Die Design Laboratory Procedures I, II
Drafting for Shipbuilding, Advanced
Drafting Standards (Ins.)
Drafting Techniques & Procedures I
Electrical Equipment, Appl. of (Ins.)
Electronics, Indus. Application of
Employee Relations for Supervisors (Ins.)
Employment Tests for War Industry
Engrg. Fund. II: Adv. Mechanics (Ins.)
Fabrication Methods for Designers (Ins.)
Factory Liaison Training I (Ins.)
Fluid Mechanics for Designers (Ins.)
Ignition Systems (Ins.)
Industrial Laboratory Chemistry
Industrial Organization & Oper. (Ins.)
Layout Practice, Case Studies for (Ins.)
Layout Practice, Descriptive Geometry & Case Studies for (Ins.)
Lofting Lines II
Machine Jig & Fixture Design II
Machined Parts Control (Ins.)
Management Prin. for Engineers (Ins.)
Manning Tables & Replacement Schedules, Preparation of (Ins.)
Marine Elec. Blueprints, Inter. of (Ins.)

(continued)

University of California (continued)

Material Procurement (Inservice)
Metallurgy, Applied
Metallurgy for Aircraft Design, Ferrous (Ins.)
Numerical Analysis (Ins.)
Office Management
Personnel & Employment Psychology(Ins.)
PRODUCTION ILLUSTRATION
Production Illustration II
Production Mngmt. Problems (Ins.)
Pumping Machinery & Its Application to Industrial Problems (Ins.)
Radio, Fund. of - Laboratory
Safety Engineering, Applied (Ins.)
SHIP DRAFTING
Shipyard Organization & Operation (Ins.)
Structural Design, Elementary
Supervision of Operative Personnel(Ins.)
Thin Plates Sheet Analysis
Tool Design: Mach. Jig&Fixture Lab. I, II
Tool Planning, Intro. to I (Ins.)
Tool Planning & Design (Ins.)
Trigonometry
War Contract & Accounting Procedures
Welding Metallurgy (Ins.)
Work Simplification & Time Study

University of Redlands, Redlands

Theory of Direct Currents (Ins.)

University of Southern California, Los Angeles

Aerodynamics, Elements of
Aircraft Elements (Ins.)
Aircraft Electricity
Aircraft Industry, Production Engineering in (Ins.)
AIRCRAFT PRECISION INSPECTION (Ins.)
Electric Motor Control Design & Operation (Ins.)
Engineering Mathematics, Applied
Industrial Counseling Methods (Ins.)
Industrial Organic Analysis
Industrial Sanitation Control (Ins.)
Inspection Planning & Procedures (Ins.)
Machine Design & Materials
Metallurgical Plants, Design & Operation of (Ins.)
Metallurgy of Light Metals & Alloys (Ins)
Perspective Drawing for Aircraft Engineers (Ins.)
Pumps & Hydraulic Machinery
Textile Engineering I (Ins.)
War Minerals, Technology of

COLORADO

Colorado School of Mines, Golden

Engineering Mathematics for Teachers
Timber Structures, Design of

Colorado State College of A. & M. Arts, Fort Collins

Engineering Fundamentals

University of Colorado, Boulder

Chemistry of Steel Works Laboratory
Engineering Fundamentals, Intro.
Industrial Inspection for Aircraft
Mathematics Retraining
Mathematics for Teachers
Photogrammetry
Synthetic Resins & Rubber, Prodn.& Use of

University of Denver, Denver

AIRCRAFT DRAFTING

CONNECTICUT

University of Connecticut, Storrs

Aircraft Engine Design (Ins.)
Business, Foundations of (Ins.)
Chemistry of the Metals I, II (Ins.)
Cost Accounting (Ins.)
Cutting Tool Design
(continued)

University of Connecticut (continued)

Differential Calculus (Inservice)
Dynamics of Machines (Ins.)
Electricity III (Ins.)
Engineering Physics II (Ins.)
Industrial Electricity I (Ins.)
Industrial Materials Procurement & Stockroom Control (Ins.)
Industrial Office Organization & Management (Ins.)
Indus. Personnel Office Oper. (Ins.)
Industrial Safety for Foremen
Industrial Supervision (Ins.)
Industrial Traffic Management & Rating, Advanced (Ins.)
Integral Calculus (Ins.)
Internal Management (Ins.)
Job Analysis, Evaluation & Wage Administration (Ins.)
Machine Design I, II (Ins.)
Mechanical Drawing II (Ins.)
Mechanical Engrg. Drawing (2 C.) (Ins.)
Mechanisms (Ins.)
Operations Planning: Proc. & Tech.(Ins)
Production Supervision
Quality Control (Ins.)
Radio & Electronics (Ins.)
Strength of Materials (Ins.)
Supervision, Industrial (Ins.)
Thermodynamics I, II (Ins.)
Welding Theory, Inspn. & Supvn. of(Ins.)
Work Simplification (Ins.)

Yale University, New Haven

Industrial Maintenance (Ins.)

DELAWARE

University of Delaware, Newark

Chemical Engrg. Calculations B (Ins.)
Mechanics (Ins.)
Motion & Time Analysis - Advanced

DISTRICT OF COLUMBIA

Catholic University of America, Washington, D. C.

Centimeter Wave Techniques (Ins.)
Electronics, Advanced (Ins.)
Industrial Analysis (Ins.)
Mathematics & Mechanics, Inter. (Ins.)
Production Control
Structures, Adv. (Ins.)

George Washington University, Washington, D. C.

Engineering Mathematics, Intermediate
Math. for Secondary School Teachers

Howard University, Washington, D. C.

Engineering Electronics
ENGINEERING FUND. (Jr. Engr. Supp.)

FLORIDA

University of Florida, Gainesville

Airplane, Fundamentals of the
Marine Electricity, Elementary
Mathematics for High School Teachers II
Physics for High School Teachers II
Qualifying Math. for Engrg. Courses

GEORGIA

Atlanta University, Atlanta

Chemistry for Laboratory Technicians & Sanitary Aids
Mathematical Calculations for Chemists
Statistics, Industrial

Georgia School of Technology, Atlanta

AIRCRAFT STRUCTURES & DESIGN
Engineering Drawing C
Engineering Physics I
Flight, Principles of (Inservice)
Mill Methods & Management
Personnel Administration (Ins.)
Physics for H. S. Teachers (Negroes)
Production Illustration, Advanced
Qualifying Math. for Engrg. Courses
Structural Design Calculations
Textile Processes (2 Courses)
Textile Standards & Inspection

IDAHO

University of Idaho, Moscow

AIRCRAFT DRAFTING

ILLINOIS

Bradley Polytechnic Institute, Peoria

Machine Design

De Paul University, Chicago

Chemistry, Analytical
Chemistry, Fund. of Organic
FIELD COMMUNICATION (Ins.)
Industrial Organization
Industrial Standard Cost Accounting
Industrial Statistics, Advanced
Industrial Supervision: Foremanship Training for Men

Illinois Institute of Technology, Chicago

Aluminum, Metallurgy of
Drawings & Specifications (Ins.)
Electrical Engrg. Mathematics (3 C.)
Electronics, Advanced
Electronics & Circuit Theory
Electronic Tube Applications & Industrial Electronics
Engineering Drafting
Engineering Mathematics, Basic (Ins.)
Engineering, Radio
EXPLOSIVES MANUFACTURE, FUND. OF (Ins)
Food Analysis, Quantitative
Food Dehydration Problems
Illuminating Engineering (Ins.)
Industrial Mngmt. for Foremen II (Ins.)
Indus. Mngmt. for Ord. Personnel (Ins.)
Job Evaluation & Wage Incentives (Ins.)
Metallurgy, Non-ferrous (Ins.)
Microwave Techniques
Organic Chemistry for Engineers (Ins.)
PLANT PROTECTION ENGINEERING (Ins.)
Power Systems Engineering Problems
Production Illustration, Intro. to
Radio, Elements of
Radio Inspection & Measurements
Telephone Communications, Elem. (Ins.)
Time Study Practice (Ins.)
Wood Technology (Ins.)
X-ray Testing Methods

Northwestern University, Evanston

Chemistry of Plastics & Other Synthetics
ENGINEERING FUND. (Jr. Engr. Supp.)
Military Map Making
Naval Architecture & Ship Drafting
Process Design, Industrial (Ins.)
Radio, Fundamentals of II

University of Chicago, Chicago

Survey of Industrial Statistics (Ins.)

University of Illinois, Urbana

Hydraulics & Hydraulic Machines (Ins)
Industrial Supervision, Organization & Techniques of
Petroleum Refinery Engineering (Ins.)
Safety Engineering B
Stress Analysis, Elementary (Ins.)

INDIANA

Indiana University, Bloomington

Cost Accounting for Government Contracts (Inservice)
Materials, Procurement of
Math. for Teachers (Correspondence)
Physics for Teachers (Correspondence)
Supervision, Effective (Ins.)
Transportation, Industrial

Purdue University, Lafayette

Automatic Controls, Industrial Applications of (Ins.)
Engineering, Diesel
Magnaflux Inspection, Prin. of
Mathematics for Electrical Engineers, Applied I, II (Ins.)
Mathematics for Engineering Courses, Qualifying Course in (Ins.)
Mechanism
Oils, Fats & Waxes, Technology of (Ins)
Radio Design Formulae, Indus. (Ins.)
Radio Engineering, Advanced II (Ins.)
Radio Mathematics & Electricity (Ins.)
Radio Receiver & Transmitter Circuits, Modern (Ins.)
Time & Motion Study

University of Notre Dame, Notre Dame

Auditing for War Contracts (Ins.)
Chemical Engineering for Production Supervision (Ins.)
Chemistry, Elem. of Organic II
Chemistry, Qualitative Organic II
Electrical Engrg., Fund. of (Ins.)
Electronics (Ins.)
Electroplating, Practical
Engineering Drawing, Elem. Prin. of II
Engineering Drawing, Intermediate II
Job or Occupation Evaluation
Mathematics, Adv. Industrial (Ins.)
Metallurgical Analysis, Qualitative
Metals, Heat Treatment of (Ins.)
Perspective Drawing, Aircraft

IOWA

Drake University, Des Moines

Industrial Accounting
Radio Technician I

Iowa State College, Ames

Foreman Conferences II
Industrial Safety Engrg., Adv. (Ins.)

State University of Iowa, Iowa City

JUNIOR ENGINEER - SUPPLEMENTAL
Math. for Teachers (Correspondence)
Physics for Teachers (Correspondence)
U. H. F. Techniques, Intro. (Ins.)

KANSAS

Kansas State College of Agriculture and Applied Science, Manhattan

INSPECTOR TRAINING, ARMY AIR FORCE

University of Kansas, Lawrence

Aerial Mapping (Ins.)
Aircraft Electrical Systems (Ins.)
Aircraft Instruments, Advanced
(continued)

University of Kansas (continued)

Aircraft Materials & Construction Practices: Sheet Metal (Ins.)
Airplane Stress Analysis I (Ins.)
Electro-chemistry (Ins.)
Heat Treatment, Principles of
Indus. Safety for Airc. Supvrs.(Ins.)
Office Management
Qualifying Mathematics for Engineering Courses
Sabotage, Detection & Prevention of(Ins.)
Safety Engineering, Advanced
Traffic Management

KENTUCKY

University of Kentucky, Lexington

Fire Prevention & Protection Inspn.
Industrial Accounting (Ins.)
Industrial Electricity
Industrial Management
Metallurgy
Industrial Psychology (Ins.)
Petroleum Chemistry
Pre-engineering Mathematics
Radio, Fundamentals of II
Steam Power Plant Equipment & Operation (Ins.)

University of Louisville, Louisville

Interpretation of Airplane Blue Prints (Ins.)

LOUISIANA

Centenary College of Louisiana, Shreveport

Government Contract Procedure & Accounting
Industrial Auditing
Industrial Statistics, Principles of
Personnel Management

Louisiana Polytechnic Institute, Ruston

Engineering Drawing II
Qualifying Math. for Engrg. Course

Louisiana State University, Baton Rouge

Cost Accounting
INDUSTRIAL ACCOUNTING
Physics for Teachers (Correspondence)
Ultra-high Frequency Techniques

Loyola University, New Orleans

General & Analytical Chemistry I, II (For Negroes)
Qualifying Mathematics
Transportation & Traffic Management

Tulane University, New Orleans

AIRCRAFT DRAFTING I
Industrial Chemical Analysis
Ultra-high Frequency Techniques, Intro.

MAINE

University of Maine, Orono

Electrical Engineering, Advanced
Qualifying Mathematics for Engineers

MARYLAND

Johns Hopkins University, Baltimore

Aerial Mapping B
Aircraft Hydraulics Application Laboratory (Inservice)
Alcohol Distillation
Arc Welding Metallurgy B (Ins.)
D. C. Marine Electrical Appl. (Ins.)
Foremanship Development in War Indus.
Marine Engines II (Inservice)
Personnel & Foremanship Supervision in Industry (Ins.)
PRE-RADAR A (Ins.)
Psychology of Indus. Relations (Ins.)
Spectrographic Analysis of Metal (Ins)
X-ray Interpretation (Ins.)

University of Baltimore, Baltimore

Freight Traffic Problems & Procedures (Ins.)
Transportation Problems of Industry and Carriers, Wartime (Ins.)

University of Maryland, College Park

Aircraft Design II (Ins.)
Aircraft Stress Analysis II
ENGINEERING, INDUSTRIAL SAFETY
Engineering, Adv. Industrial Safety
Materials, Elementary Mechanics of
Photogrammetry
Production Planning II
RADIO COMMUNICATIONS III
Radio, Principles of II

MASSACHUSETTS

Boston College, Newton

Cost Accounting & Control, Indus.
Management, Industrial
Management, Personnel
Plant Production Control
Purchasing Procedures, Indus. Wartime
Quantitative Chemical Analysis
Statistics, Industrial

Boston University, Boston

Qualifying Mathematics

Clark University, Worcester

Mathematics Refresher Course for Teachers

Harvard University, Cambridge

Vacuum Tubes & Radio Circuits

Massachusetts Institute of Technology, Cambridge

Engineering, Safety (Ins.)
Engrg. Statistics in Quality Control
Mathematics for Teachers
ULTRA-HIGH FREQUENCY TECHNIQUES, SPECIAL APPLICATIONS OF (Ins.)

Massachusetts State College, Amherst

Industrial Safety Engineering (Ins.)

Northeastern University, Boston

ENGINEERING, INTRODUCTION TO
Glass Processing
Glass Processing - Theory & Application (Ins.)
Mathematics, Pre-engineering

Simmons College, Boston

Chemistry, Advanced Organic
Chemistry, Physical
Chemistry, Techniques & Calculations of Analytical

Worcester Polytechnic Institute, Worcester

Continuous Frames of Steel & Concrete
Industrial Electronic Applications
Mathematics for High School Teachers
Mechanics: Statics & Strength of Matls.
Production Engineering, Elements of
Strength of Materials, Elementary

MICHIGAN

Detroit Institute of Technology, Detroit

Accounting Statements for War Industries, Analysis of (Inservice)
Auditing Procedure (Ins.)
Cost Control for War Production (Ins)
Industrial Engineering
Mathematics for War Indus., Essen.(Ins)
Plant Equipment & Layout for Prodn.
Plant Production Control (Ins.)
Process Practices in the Airc.Indus.(Ins)
Railroad Freight Tariff Mngmt. (Ins.)
Selection of Personnel & Employment & Job Tests (Ins.)
Supervising Women Workers (Ins.)
Supervising the Working Women, The Psychology of (Ins.)

Lawrence Institute of Technology, Highland Park

Financial Engineering (Ins.)
Industrial Electronics I, II
Magnetic Circuits
Mathematics for Engineers, Elem. (Ins.)
Power Cost Analysis
Radio Communication II

Michigan College of Mining and Technology, Houghton

Engineering Drawing II

Michigan State College, East Lansing

Engineering Fundamentals (Junior Engineer Supplemental)
Industrial Quantitative Analysis
Photogrammetry, Advanced (Ins.)

University of Detroit, Detroit

Accounting, Adv. Indus. & Corporation
Design Methods, Basic
Industrial Electronics
Industrial Safety Engrg., Adv. (Ins.)
Junior Engineer - Supplemental I
Labor Legislation (Ins.)
Math. for Electrical & Radio Engrs.(Ins)
Motion & Time Study
Production, Measurement & Inspection
Qualifying Math. for Engrg. Courses
Structural Analysis

University of Michigan, Ann Arbor

Air Sanitation in Industry (Ins.)
Diesel Engine Power Plants (Ins.)
Metals, Physical Properties of (Ins.)
Metallurgy, Applied (Ins.)
Metallurgy, Practical (Ins.)
Methods Improvement & Time Study (Ins.)
Office Standards & Procedures (Ins.)
Operational Math. for Engrs., Adv. (Ins)
ORDNANCE ENGINEERING AIDS (Ins.)
Qualifying Mathematics for Engineers
Radio Devices & Techniques (Ins.)
Thin Metal Aircraft Structures, Theory & Applications of (Ins.)

Wayne University, Detroit

Accounting, Corp. & Mfg. (Ins.)
Electronics Engineering II
ENGINEERING DRAFTING
Industrial Safety Engineering, Adv.(Ins.
(continued)

Wayne University (continued)

Inspection Methods, Industrial
Machines, Hydraulic (Adv.) (Inservice)
Materials, Strength & Testing of
Mathematics for Engrg. Courses, Qual.
Mathematics, Shop
Metallurgy, Ferrous II (Ins.)
Stress Analysis, Experimental
Surveying (Adv., Elem.) (Ins.)
Traffic Management (Fund., Adv.) (Ins.)

MINNESOTA

St. Olaf College, Northfield

COLLEGE PHYSICS

TEACHER PREPARATION IN MATHEMATICS

University of Minnesota, Minneapolis

Aircraft Gun Mount Inspection Practice (Ins.)
Electrical Engineering, Fund. (Ins.)
Engineering Drafting
Engineering Mathematics
Explosives, Chemistry & Testing of
Industrial Instrumentation & Automatic Control II, III
Machine Design
Marine Electricity
Mathematics for Secondary School Teachers (Correspondence Course)
Mechanics
Methods & Time Study (Ins.)
Office Management & Clerical Supvn.
Physics for Secondary School Teachers (Correspondence Course)
Production Control (Ins.)
Production Engineering & Supvn. (Ins.)
Production Supervision II (Ins.)
Qualifying Math. for Engrg. Courses
Safety Engineering for Powder & Explosives Plants (Ins.)
Tool & Gage Inspection

MISSISSIPPI

Mississippi State College, State College

Accounting, Payroll & Social Sec. (Ins)
Engineering, Welding (Ins.)
Production Management (Negroes)
Soil Mechanics (Ins.)
Statistics, Adv. Industrial
Trigonometry & Slide Rule Oper. (Ins.)

MISSOURI

St. Louis University, St. Louis

Cost Accounting for War Prodn. (Ins.)

University of Missouri, Columbia

AERONAUTICAL DRAFTING
Radio, Fundamentals of I
Topographic Drafting, Advanced
Ultra-high Frequency Techniques

Washington University, St. Louis

Aircraft Drafting for Men
Aircraft Indus., Appl. of Plastics in
Aircraft Industry, Trigonometry with Applications from the
Aircraft Manufacturing, Estimating Production Costs in
Aircraft Mfg. Processes, Intro. (Ins.)
Aircraft, Tool Design as Applied to(Ins.)
Aircraft Weight & Balance Control
Airplane Drafting for Women II
Airplane Power Plants, Design Calculations for
Airload Dist., Spanwise & Chordwise
Chemical Engineering, Intro. to
(continued)

Washington University (continued)

Chemistry of Synthetic Drugs
Cost Accounting (Ins.)
Elec. Communication Circuits, Fund.of
Engineering Mechanics
Heat Engines
Industrial Control Instruments
Industrial Safety Engineering II
Mathematics for Engineers, Adv. II
Math. for Teachers, Review Course in(Ins)
Plastics, Manufacture & Indus. Use of
Radio Engineering II
Template Layout, Math. Fund. of (Ins.)
Tool Design II

MONTANA

Montana School of Mines, Butte

Radio Technology II

Montana State College, Bozeman

Radio Technology II

NEBRASKA

University of Nebraska, Lincoln

Aircraft Drafting
Aircraft Hydraulics (Ins.)
Aircraft Instruments (Ins.)
Physics for Teachers (Correspondence)
STEAM PLANT OPERATION (Ins.)
Stress Analysis (Ins.)

NEVADA

University of Nevada, Reno

Qualifying Math. for Engrg. Courses

NEW HAMPSHIRE

Dartmouth College, Hanover

Cost Accounting, Elementary (Ins.)

Vector Analysis (Ins.)

University of New Hampshire, Durham

Accounting II, IV (Ins.)
Industrial Safety Engineering (Ins.)
Mechanical Drawing II
Pulp & Paper Chemistry (Ins.)
Steam Engineering (Ins.)
Teachers of Math., Refresher Course for

NEW JERSEY

Newark College of Engineering, Newark

Chemical Procedures & Computations, Elementary
ENGINEERING ELEMENTS FOR JUNIOR DRAFTSMEN (Ins.)
ENGINEERING FUND.: ELECTRICAL (Ins.)

Princeton University, Princeton

Metallography & Physical Metallurgy, Introduction to (Ins.)
Ultra-high Frequency Techniques: Lectures

Rutgers University, New Brunswick

Aircraft Tool Design (Inservice)
Chemistry of Aqueous Solutions
Colloid Chemistry, Intro. (Ins.)
Machine Design, Advanced (Ins.)
Matls. & Products, Inspection of I, II (Ins.)
Plastics Engineering (Ins.)
Pure Organic Compounds, Identification of (Ins.)
Radio, Fundamentals of I, II
Steam Jet Ejector Applications (Ins.)
Water Works Maintenance, Prob. in (Ins.)

Stevens Institute of Technology, Hoboken

Electrical Lab. Measurement Tech.
Foundry Engineering, Fund. of (Ins.)
Lab. Methods of Quantitative Analysis

University of Newark, Newark

Industrial Statistics (Ins.)
Motor Truck Transportation (Ins.)
Personnel & Industrial Relations (Ins.)
STOCKROOM CONTROL & MATERIALS PROCUREMENT (Ins.)

NEW MEXICO

University of New Mexico, Albuquerque

Bituminous Mixtures, Design of
Engineering Drawing II
ENGINEERING FUNDAMENTALS
Engineering Fundamentals
Qualifying Mathematics for Engineers
Surveying, Advanced

NEW YORK

The City College of the College of the City of New York, New York

Explosives Lab. Techniques: Chemical Explosives, Production & Testing of
Qualifying Math. for Engrg. Course
Soil Mechanics Applied to Airport & Highway Engineering

Clarkson College of Technology, Potsdam

Analytical Chemistry, Introductory
Electrical Engineering, Elements of
Engineering Fund. - Supplemental
Foremanship (Ins.)
Job Analysis & Time Study (Ins.)

Columbia University, New York

Physical Metallurgy

Cooper Union, New York

Restrained Beams & Rigid Frames

Cornell University, Ithaca

Aerodynamics of Perfect Fluids, Theoretical (Ins.)
Aerodynamics of Structural Load Determination (Ins.)
AIRPLANE CONSTRUCTION & MATLS. A (Ins.)
BLUEPRINT INTERPRETATION & MACHINE TOOL PROCESSES (Ins.)
Electric Tube Circuit Calc. (Ins.)
ENGINEERING, METHODS (Ins.)
Industrial Accounting & Cost Finding, Principles of (Ins.)
Indus. Chemical Calculations (Ins.)
Industrial Safety Engineering II (Ins.)
Industrial Structural Engineering
Loft & Template Development (Ins.)
MATERIALS CONTROL B (Ins.)
MATHEMATICS D (Ins.)
Mathematics, Applied (Ins.)

(continued).

Cornell University (continued)

Mathematics for Teachers I, II
Metals, Heat Treatment of (Inservice)
Metals & Alloys, Non-ferrous (Ins.)
Metallography, Applied (Ins.)
Physics for Teachers I
PLANNING & TOOL DESIGN E-1 (Ins.)
Plastics & Plastic Molding (Inservice)
Production Illustration (Ins.)
Radio, Fundamentals of II
Stress Analysis (Ins.)
Time & Motion Studies (Ins.)
TOOL DESIGN E-2 (Ins.)
Welding Engineering & Metallurgy (Ins.)

Defense Training Institute of the Engineering Colleges of Greater New York, 375 Pearl Street, Brooklyn

Engineering Fundamentals

Hofstra College, Hempstead

Calculus for Physicists, Adv. II (Ins.)
Electronics, Elementary
Mathematics, Basic
Mathematics, Qualifying
Radio, Fundamentals of II

Hunter College of the City of New York, New York

Cost Accounting for War Industries
Industrial Accounting for Essential Industries
Industrial Labor Relations (Ins.)
Industrial Purchasing & Inventory Control
Personnel Management

Manhattan College, New York

Calculus, Differential & Integral (Ins.)
Geometry & Trigonometry, Spherical
Materials, Elem. Strength of (Ins.)
Public Works Emergency Prob. (Ins.)
Refinery Piping Design (2 C.) (Ins.)
Reinforced Concrete Structures, Advanced Design of (Ins.)
Steel Structures, Adv. Design of (Ins.)
Structural Analysis, Elem. (Ins.)

New York University, New York

Electronics with Special Applications, Elements of (Ins.)
Engineering Computations, Basic
Industrial Accident Prevention, Adv. Course for Instructors in (Ins.)
Industrial Fire Prevention
Metallography & Metallurgy, Adv.
Metallurgical Spectroscopy, Industrial Applications of
Motor Freight Transportation (Ins.)
Pipe Design
Pre-engineering Mathematics
Production Gaging & Inspn. Methods
Technical Quality & Inspn. Control (Ins.)
Wage & Hour Admin. in Wartime (Ins.)

Niagara University, Niagara Falls

Chemical Calculations, Indus. IA, IB
Chemistry, Elementary Physical
Chemists, Calculus for

Polytechnic Institute of Brooklyn, Brooklyn

Aircraft Descriptive Geometry (Ins.)
Aircraft Stress Analysis as Applied to Monocoque Structures
Army Sanitary Engineering
Electricity & Magnetism
Microwaves, Intro. Experiments in
Mold Design for Plastics
Prodn. Drawings, Three Dimensional (Ins)
Soil Testing for Airports, Elementary
Timber Design & Construction
U. H. F. Generators & Receivers

Rensselaer Polytechnic Institute, Troy

Accounting, Corp. & Manufacturing
Engineering Mathematics, Applied
Industrial Drafting
Map & Aerial Photograph Reading
Radio Communication, Elements of
X-ray & Spectrographic Analysis of Metals & Alloys

St. Bonaventure College, St. Bonaventure

Auditing
Lab. Practice & Measuring Instruments
Statistics II

Syracuse University, Syracuse

Cost Accounting, Advanced
Hydraulics
Qualifying Math. for Engrg. Courses

University of Buffalo, Buffalo

Electrical Theory, Elementary
Geometrical Optics & Optical Instruments I (Ins.)
Industrial Chemistry II
Industrial Psychology (Ins.)
Industrial Safety III
Industrial Statistics (Ins.)
Mathematics for Teachers
Physics

University of Rochester, Rochester

Applied Optics: Laboratory
Chemical Engineering Applications
Engineering Drafting, Advanced
Engineering Mathematics, Intermediate
Industrial Safety Engineering I
Machine Tools & Processes
Manufacturing Procedures, Intro. to (Ins)

NORTH CAROLINA

Agricultural & Technical College of North Carolina, Greensboro

Engineering Mathematics
Physico-chemical Methods of Analysis

Duke University, Durham

Engineering Appl. of Mathematics (Ins.)

North Carolina State College, Raleigh

Hull Construction & Design, Prin. of
Marine Electricity, Principles of
Marine Steam Engineering (Ins.)
Mathematics for Engineering (Ins.)
Mathematics for College Teachers, A Refresher Course in
Physics for College Teachers, A Refresher Course in
Radio Communication, Adv. (Ins.)

University of North Carolina, Chapel Hill

CHEMISTRY OF WATER PURIFICATION

OHIO

Antioch College, Yellow Springs

Industrial Accounting
Mathematics of Engrg. Research (Ins.)

Case School of Applied Science, Cleveland

Aircraft Engines (Inservice)
Assembly Jig Alignment (Ins.)
Chemistry of Internal Combustion Engine Fuels (Ins.)
Diesel Engine Testing (Ins.)
DRAFTING PRACTICE (Ins.)
DRAFTING TECHNIQUES
Engine Testing Techniques (Ins.)
Engineering Drawing (Ins.)
Heat Transfer (Ins.)
Industrial Electricity
Industrial Process Control A
Inspection Technology
JUNIOR ORDNANCE INSPECTION (Ins.)
Machine Design - Strength of Materials
Machine Design, Fund. of III
Mathematical Analysis, Intro. to (Ins.)
Metallurgy (Ins.)
Paint & Varnish Technology
PRECISION AIRCRAFT INSPECTION (Ins.)
Rigid Frame Buildings
Technical Report Writing (Ins.)
Thermodynamics & Fluid Mechanics, Review Course in (Ins.)

Fenn College, Cleveland

Aircraft Drafting
Auditing of Government Contracts
Cam & Tool Design for Automatic Screw Machines (Ins.)
Diesel Engine Theory (Ins.)
Industrial Accounting, Intermediate
Labor Law
Machine Drawing (Ins.)
Materials Procurement
Mechanical Inspn., Theory of (Ins.)
Motion Economy, Principles of (Ins.)
Motion & Time Study (Ins.)
Office Supervision
Plastics, Physical & Molding Properties of (Ins.)
Production Planning & Control
Pyrometric Theory & Maintenance (Ins.)
Supervision, Principles of
Surveying Theory
Transportation, Fund. of
Trigonometry (Ins.)

Miami University, Oxford

Geometry for Teachers

Ohio Northern University, Ada

Alternating Currents
Cost Accounting
Diesel Engineering II
Foremanship & Supervision (Ins.)
Industrial Accounting
Industrial Mathematics II (Ins.)
Machine Design, Advanced
Personnel Management & Indus. Relations
Petroleum Engineering (Ins.)
Quantitative Analysis, Elementary
Radio Technician Training II

Ohio State University, Columbus

Aeronautics, Principles of (Ins.)
Coal Mine Safety (Ins.)
Engineering Electronics
Engineering Mathematics, Fund. (Ins.)
Explosives Chemistry & Lab. Tech.
Iron & Steel, Metallography & Heat Treatment of
Machine Drawing
Mathematical Methods in Science (Ins.)
Military Map Making
Open Hearth Processes
Precision Inspection (Ins.)
Production Control Charts (Ins.)
Production Organization & Mngmt. (Ins.)
Radio, Fundamentals of II
Stress Anal. in Airplane, Adv. (Ins.)
Theoretical Physics, Intro. to (Ins.)

Ohio University, Athens

Electricity, Elementary II (Ins.)
Engineering Mathematics for Teachers
General Physics (Refresher Course for Teachers)

(continued)

Ohio University (continued)

Industrial Auditing (Inservice)
Industrial Safety
Machine Drawing
Management for the Shop Supervisor (Ins)
Supervision, Practical (Ins.)
War Industry, Human Relations & Aptitudes in (Ins.)

University of Akron, Akron

Aerodynamics, Advanced (Ins.)
Engineering Mechanics, Statics (Ins.)
Industrial Psychology (Ins.)

University of Cincinnati, Cincinnati

Chemical Engineering for Production Supervision
Mathematics & Mechanics, Applied (Ins)
Mechanics & Strength of Materials, Practical (Ins.)
Plastic Molds & Tool Design
Welding Engineering

University of Dayton, Dayton

Advanced Radio Practice

University of Toledo, Toledo

Electricity, Practical
Electronics
Hydraulics & Fluid Mechanics
Industrial Analytical Chemistry
Industrial Drafting II (Ins.)
Industrial Engineering Drawing
Industrial Office Management (Ins.)
Indus. War Plants Mfg. Process
Industrial Traffic Management
Mechanics, Elementary
Sanitary Engineering
Welding Engineering (Ins.)

Western Reserve University, Cleveland

Industrial Psychology
Job Analysis (Ins.)
Organic Chemistry, Lab. Tech. in
Production Statistics, Fund. of
Radio Fundamentals I, II (Intensive Radio Trigonometry)
Statistical Aids for Personnel Work
Statistical Control of Production

Wilberforce University, Wilberforce

Analytical Chemistry
Industrial Psychology
Metallurgical Analysis

Youngstown College, Youngstown

Chemistry of Metals & Alloys

OKLAHOMA

Oklahoma A. & M. College, Stillwater

ARMY AIR FORCES INSPECTION-GENERAL (Ins.)
Mathematics, Applied (Ins.)
Petroleum, Chemical Technology of
Qualifying Math. for Engrg. Courses

Oklahoma City University, Oklahoma City

Cost Accounting
Organic Chemistry

University of Oklahoma, Norman

Aeronautical Engrg. Terminology
Aircraft Die Design Theory & Prac. (Ins)
Airplane Mechanics, Theory of (Ins.)
Engineering Fundamentals
Industrial Chemistry (Ins.)
Industrial Electricity
INDUSTRIAL SAFETY ENGINEERING (Army, Air Force, & Navy) (Ins.)
Production Control, General (Ins.)
Qualifying Math. for Engrg. Course
Service & Flight Inspection
Traffic Management & Rating (Ins.)

University of Tulsa, Tulsa

Engineering Vibration
Metallurgy

OREGON

Oregon State College, Corvallis

DESCRIPTIVE GEOMETRY (Ins.)
ENGINEERING COMPUTATIONS & ELEMENTARY DESIGN
ENGINEERING DRAWING
MATHEMATICS REVIEW (Ins.)
Metallurgy of Heavy Indus. Materials
Plane Trigonometry
Quality Control (Ins.)

PENNSYLVANIA

Carnegie Institute of Technology, Pittsburgh

Aeromechanics, Elements of II
Electrical Engineering, Elem. of
Engineering Math., Review of II (Ins)
Heat Engines, Testing of (Elem.)
Industrial Relations
Industrial Statistics
Machine Design (Adv., Elem.)
Manning War Industries
Metallurgical Engrg., Elem. of - Physical
Metallurgical Microscope Techniques
Office Management
Production Control
Production Management
Qualifying Math. for Engrg. Courses
Radio, Fundamentals of II

Drexel Institute of Technology, Philadelphia

Biological Chemistry, Adv. (Ins.)
Electronics II
Engineering, Elements of V, VI
Industrial Psychology (Ins.)
JUNIOR AERONAUTICAL ENGINEERING
JUNIOR ENGINEERING (Ins.)
Strength of Materials
Textile Technology II (Ins.)
Welding, Metallurgy of

Franklin and Marshall College, Lancaster

Analytical Geometry & Elem. Calculus
Industrial Organic Chemistry, Elem.
Physics of Vacuum Tubes
Production Planning & Control (Ins.)
Production, Prop. & Util. of Plastics II
Standard Costs & Budgetary Control

Grove City College, Grove City

Diesel Engineering
Engineering Alloys, Testing & Inspection of

Haverford College, Haverford

Analytical Chemistry
Radio, Fundamentals of II

Lehigh University, Bethlehem

AIRCRAFT PRODUCTION, PRIN. OF (Ins.)
Radio, Fundamentals of II (Inservice)

Pennsylvania State College, State College

Aircraft Template Prodn. Methods
Algebra & Trigonometry for Secondary School Teachers
Chemical Thermodynamics II
Chemistry of Engrg. Matls. I, II (Ins)
Chemistry, Industrial Organic
Design, Machine I, II
DRAFTING, AIRCRAFT DETAIL
Drafting, Engineering II
Drafting Practices, Indus.: Tracing
Electronics, Industrial II
Fuel Oils & Gases, Analysis of (Ins)
Heat Treatment of Steel II, III
Instrumentation II, III
Labor Management Relations (Ins.)
Laboratory & Glassblowing Tech., Adv.
Materials, Strength of
Mathematics for Engrg. Courses, Qual.
Mechanical Detailing for Women
Procedures in War Prodn., Cost (Ins.)
Production Engineering:
  Aircraft Production Processes
  Cost Control
  Cost Estimating
  Personnel Management (Ins.)
  Tool Design I, II
Railway Signaling, Fund. of II
Textile Chem. for Testing & Inspn.
TEXTILE ENGINEERING FOR FIELD INSPN.

Temple University, Philadelphia

Cathode Ray-tube & Non-sinusoidal Waves (Ins.)
RADIO COMMUNICATIONS (Pre-airborne Radio)

University of Pennsylvania, Philadelphia

Alternating Currents for Radio Repairmen (Ins.)
Architecture Calculations, Naval
Architecture Design, Naval
Dimensional Control (Ins.)
Engineering Computations (Ins.)
Engineering, Inspection (Ins.)
Engineering, Adv. Methods (Ins.)
Metal Manufacturing Processes
Non-sinusoidal Wave, Generation & Application of (Ins.)
Procurement & Priorities, Indus. (Ins)
Radar Equipment, Testing of (Ins.)
Radio Direction Finders & Servo Devices (Ins.)
Radio Theory for Test Work II (Ins.)
Shipbuilding: Materials and Equipment (Ins.)
Ship Machinery Installations (Ins.)
Tool, Jig & Fixture Design II (Ins.)
Transmitter Design (Ins.)
Ultra-high Frequencies II (Ins.)

University of Pittsburgh, Pittsburgh

Chemical Control for Food Industries
Engineering, Fund. of Industrial
Math. for Engrg. Courses, Qualifying

Villanova College, Villanova

Steam Power Plants, Elements of (Inservice)

RHODE ISLAND

Brown University, Providence

Analytical Machine Design (Ins.)
Electrical Engineering, Elementary
Military Map Making for Women

Rhode Island State College, Kingston

Chemistry, Advanced Organic
Chemistry, Inorganic
Chemistry, Physical
Cost Accounting
Industrial Electronics (Inservice)
Industrial Safety Engineering (Ins.)
Machine Design, Introduction to
Motion & Time Study
Non-ferrous Metallurgy (Ins.)
Personnel Supervision (Ins.)
Pre-engineering Mathematics
Production Control

SOUTH CAROLINA

The Citadel, Charleston

Electrical Engineering, Elem. (Ins.)
HIGHER MATHEMATICS (Ins.)
Marine Engineering (Ins.)
Metallurgy, Elementary (Ins.)
Production Supervision (2 C.) (Ins.)
Qualifying Course in Mathematics for
Engineering Courses
Technical Chemical Analysis

Clemson Agricultural College, Clemson
Junior Engineer

Colored Normal, Industrial, Agricultural & Mechanical College, Orangeburg

Chemistry (Organic Synthesis)
Engineering Drawing, Advanced
Engineering for Women, Elem. of
General Statistics, Applied
Industrial Organization & Management
Office Management

Furman University, Greenville
Cost Accounting for War Production

University of South Carolina, Columbia
Electricity, Elements of
Food Processing Plants, Construction &
Chemistry of

TENNESSEE

University of Tennessee, Knoxville

Bombardment Aircraft Production &
Assembly, Basic & Adv. (Ins.)
Cost Accounting I
Electrical Instruments & Control
Circuits (Ins.)
Engineering Mathematics II (Ins.)
Engineering Mechanics, Elem. II (Ins.)
Engineering Problems (Ins.)
General & Analytical Chemistry II
Indus. Accounting & Office Mngmt.
Mathematics, Refresher Course in I (Ins)
Personnel Management (Negroes)
Radio Technicians II (Negroes)

TEXAS

A. & M. College of Texas, College Station

Aerial Photogrammetry
Aircraft Electricity (Ins.)
Aircraft Inspection, Adv. (Ins.)
Aircraft Manufacturing Methods for
Management Personnel (Ins.)
Aircraft Production Practices, Elem.(Ins)
Aircraft Radio (Ins.)
Airport Design, Construction &
Maintenance of

(continued)

A. & M. College of Texas (continued)

Architectural Drafting
Electrical Machinery (Inservice)
Engineering Drawing II (Negroes)
Industrial Chemical Testing (Negroes)
INDUSTRIAL SAFETY (Ins.)
Machine Practices, Adv.: Grinding(Ins)
Manufacturing Costs, Estimation of
Manufacturing Planning (Ins.)
Piping Design
Qualifying Math. for Engrg. Courses
Radio Engineering, Fund. of II
Sanitary Engineering in War Indus.
Sewerage & Sewage Disposal
Sheet Metal Layout, Practical
Surveying
Surveying & Mapping, Advanced
Tool Proofing, Advanced (Ins.)
WELDING ENGINEERING

North Texas State Teachers' College, Denton

Radio I

Rice Institute, Houston

Applied Mechanics

Southern Methodist University, Dallas

Aeronautical Engrg. Terminology (Ins.)
Aircraft Descriptive Geometry
AIRCRAFT DRAFTING
Aircraft Drafting, Elementary
Commercial Air Transportation
Industrial Management
Industrial Personnel Management
INDUSTRIAL SAFETY (Ins.)
Mathematics for Engineers III (Ins.)
Personnel Administration
Radio Theory, Advanced
Surveying, Elementary
Trigonometry, Applied

Texas College of Arts & Industries, Kingsville

Engineering Fund. (Jr. Engr. Supp.)
Natural Gas, War Products from (Ins.)

Texas College of Mines & Metallurgy, El Paso

Analysis & Disposal of Sewage
Chemistry of Engineering Materials
Engineering Drawing
Engineering Mechanics
Industrial Accounting, Advanced
Industrial Statistics
Metallography & Heat Treatment of Iron & Steel

Texas Technological College, Lubbock

Engineering Drawing, Advanced
Engineering Mechanics Statics
Methods Engineering, Fundamentals of
Production Engineering II
Radio Engineering, Fundamental II

University of Texas, Austin

Aircraft Drafting (3 Courses)
Aircraft Engines
Aircraft Flight Inspection (Ins.)
Aircraft Hydraulics, Elem. of
Aircraft Industries, Engineering Planning & Scheduling in
Aircraft Lofting (2 Courses)
Aircraft Template Development
Electrical Circuits & Industrial Control Equipment
Employee Supervision (Ins.)
Engineering Applications of Electronics to Industry
(continued)

University of Texas (continued)

Engineering Drawing, Advanced
Engineering, Heat-power
Engineering Liaison Prac. in Airc.Indus.
Engineering Math.: Calculus (Ins.)
Engrg. Math. & Physics, Industrial
Engineering Methods, Elem.
Engrg. Procedures in Airc. Indus.
Gages & Measuring Instruments for Shops
Illustration Drafting in Airc. Indus.
Industrial Application of Electronics
Magnesium Production, Problems of
Machine Drawing & Elem. of Design
Metallurgy, Industrial
Naval Architecture, Applied
Personnel Management (2 Courses)
Pumps & Compressors
Refinery Technology (Ins.)
Shipbuilding Materials Control
Shipbldg. Matls. Procurement & Control
Ship Construction: Hull Inspn. (Ins.)
Thermodynamics for AeronauticalEngrs.(Ins
Water Supply & Sewage Disposal

West Texas State Teachers College, Canyon

Cost Accounting (Inservice)
Industrial Accounting (Ins.)
Industrial Personnel Management (Ins.)
Industrial Psychology (Ins.)
Job Analysis (Ins.)

UTAH

University of Utah, Salt Lake City

Budgetary & Standard Costs
Electrical Machinery
Engineering Hydraulics
Industrial Safety Engrg. II (Ins.)
Junior Engineer Supplemental
Qualifying Math. for Engrg. Courses
Simple Structures, Design of

VERMONT

Norwich University, Northfield

Methods Engineering

VIRGINIA

Hampton Institute, Hampton

Accounting (2 Courses)
ENGINEERING FUND. (Jr. Engr. Supp.)
Foremanship Training
General Chem. with Indus. Appl. (Ins.)
Industrial Relations (Ins.)
Qualifying Math. for Engrg. Courses

University of Virginia, Charlottesville

Chemical Engineering, Elem. of II
Chemical Engrg. Equip. Design (Ins.)
Civil Engineering Problems (Ins.)
JUNIOR ENGINEERING
Strength of Materials (Ins.)
Timber Construction, Modern (Ins.)

Virginia Military Institute, Lexington

Radio Technician Training Course I

Virginia Polytechnic Institute, Blacksburg

Aircraft Electricity III
Aircraft, Engrg. Prin. of
Cost Accounting, Adv.
Cost Estimating, Construction
Engineering Layout & Computations
Industrial Supervision & Mngmt. II (Ins)
Mathematics, Refresher
Physics, Refresher
Radio Technology III
Railroad Curves & Earthwork

Virginia State College for Negroes, Ettrick

Analysis, Quantitative
Employee Selection
Office Management
Personnel Problems & Labor Legislation

WASHINGTON

Gonzaga University, Spokane

PRE-EMPLOYMENT DRAFTING

State College of Washington, Pullman

ENGINEERING DRAFTING

University of Washington, Seattle

Aircraft Wood Inspection
Labor Relations (Inservice)
Mechanics, Elementary (Ins.)
Radio Equipment, Design & Operation (Ins)
Radio, Fundamentals of II, III (Ins.)
Sanitary Engineering Hydraulics (Ins.)
Strength of Materials, Elem. (Ins.)

WEST VIRGINIA

West Virginia State College, Institute

Personnel Management
Qualifying ESMWT Mathematics

West Virginia University, Morgantown

Combustion Engineering I
Electricity I, II, IV
Industrial Safety Engrg. II (Ins.)
Metallurgy III
Statics
Strength of Materials

WISCONSIN

Marquette University, Milwaukee

Engineering Mechanics, Advanced
Materials, Inspection & Testing of
Radio, Fundamentals of II

University of Wisconsin, Madison

Auditing, Theory & Practice of
Electronics I
Fluid Mechanics: Elem. Hydraulics
Freehand Sketching & Advanced Blueprint Reading II
Industrial Psychology
Machine Shop Inspection
Military Map Making
Time & Motion Study, Advanced II
Wood Plastics & Plywoods

WYOMING

University of Wyoming, Laramie

Calculus
Mathematics for Teachers
Physics for Teachers

PUERTO RICO

University of Puerto Rico, Mayaguez

Qualifying Course in Math. for Engrg. Courses

Federal Security Agency
U. S. OFFICE OF EDUCATION
Washington, D. C.

ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING

	Institutional Representative	*Approved for E	C	P	M
ALABAMA					
Alabama Polytechnic Inst. Auburn, Alabama	Dean J. E. Hannum College of Engineering	X	X	X	X
University of Alabama University, Alabama Box 2054	Dr. W. Harold Taylor	X	X	X	X
ARIZONA					
University of Arizona Tucson, Arizona	Dean G. M. Butler College of Engineering	X	X	X	X
ARKANSAS					
University of Arkansas Fayetteville, Arkansas	Mr. Clyde Alvin VerBeck Director - ESMWT	X	X	X	X
CALIFORNIA					
California Inst. of Tech. Pasadena, California	Prof. Franklin Thomas College of Engineering	X	X	X	
Claremont Colleges Claremont, California	Robert J. Bernard Admin. Director		X	X	
Occidental College Los Angeles, California	Remsen D. Bird President		X	X	
San Jose State College San Jose, California	Prof. P. Victor Peterson		X		
Stanford University Stanford University, Cal.	Eugene L. Grant Prof. of Economics of Engrg.	X	X	X	X
University of California Berkeley, California Room 201 California Hall	Prof. Morrough P. O'Brien Department of Mech. Engrg.	X	X	X	X
University of Redlands Redlands, California	Dr. Vernon O. Tolle Director of School of Education		X	X	

*E - Engineering
C - Chemistry
P - Physics
M - Management

CALIFORNIA (continued)	Institutional Representative	*Approved for E	C	P	M
University of Santa Clara Santa Clara, California	Dean George L. Sullivan College of Engineering	X	X		X
University of So. California Los Angeles, California	Robert E. Vivian Dean, College of Engineering	X	X	X	X
COLORADO					
Colorado School of Mines Golden, Colorado	Ben H. Parker Assoc. Prof. of Geology	X			
Colorado State College of Agric. and Mechanic Arts Fort Collins, Colorado	Mr. J. Pinsky	X	X		
University of Colorado Boulder, Colorado	Prof. Warren Raeder Civil Engineering	X	X	X	X
University of Denver Denver, Colorado	Clarence M. Knudson Dean, School of Engineering	X	X	X	X
CONNECTICUT					
University of Connecticut Storrs, Connecticut	Everett A. Teal Asst. Prof. of Mech. Engrg.	X	X	X	X
Yale University New Haven, Connecticut	Forrest R. Hughes Asst. Prof. of Engrg. Drawing	X	X	X	X
DELAWARE					
University of Delaware Newark, Delaware	Prof. Howard Kent Preston Head, Dept. Theor. & Applied Mechanics	X	X		X
FLORIDA					
John B. Stetson University DeLand, Florida	Dr. W. S. Allen President		X	X	X
University of Florida Gainesville, Florida	Prof. N. C. Ebaugh Head, Mech. Engineering Dept.	X	X	X	X
GEORGIA					
Atlanta University Atlanta, Georgia	Prof. B. T. Harvey Department of Chemistry		X		X

*E - Engineering P - Physics
C - Chemistry M - Management

GEORGIA (continued)	Institutional Representative	*Approved for E	C	P	M
Georgia School of Technology Atlanta, Georgia	Prof. R. L. Sweigert Director of General Engrg.	X	X		X
IDAHO					
University of Idaho Moscow, Idaho	Prof. J. Hugo Johnson Dept. of Elec. Engrg.	X	X	X	X
ILLINOIS					
Bradley Polytechnic Institute Peoria, Illinois	Dean A. E. Gault College of Engineering	X	X	X	X
Central YMCA College 19 S. LaSalle St. Chicago, Illinois	Mr. W. D. Gilliland Assistant to the President		X		X
De Paul University 64 East Lake Street Chicago, Illinois	Howard E. Egan Dean of Liberal Arts		X	X	X
Illinois Inst. of Technology 3300 Federal St. Chicago, Illinois	Prof. J. I. Yellott Prof. of Mech. Engrg.	X	X	X	
Northwestern University Evanston, Illinois	Prof. Burgess H. Jennings Dept. of Mech. Engrg.	X	X	X	X
University of Chicago Chicago, Illinois	Mr. Reuben S. Frodin Admin. Asst. to the President		X	X	X
University of Illinois Urbana, Illinois	Dean M. L. Enger College of Engineering	X	X	X	X
Wheaton College Wheaton, Illinois	Prof. Enock C. Dyrness Vice Pres. & Registrar		X	X	X
INDIANA					
Butler University Indianapolis, Indiana	Dean M. O. Ross Acting President		X	X	X
Indiana University Bloomington, Indiana	Dr. Harry C. Sauvain Acting Dean, School of Business		X	X	X
Purdue University Lafayette, Indiana	Prof. C. W. Beese	X	X	X	

*E - Engineering
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P - Physics
M - Management

INDIANA (continued)	Institutional Representative	*Approved for E	C	P	M
Rose Polytechnic Institute Terre Haute, Indiana	Carl Wischmeyer Prof. of Mech. Engrg. & Vice-President	X			
University of Notre Dame Notre Dame, Indiana	Rev. James D. Trahey C.S.C., Administrative Asst.	X	X	X	X
IOWA					
Drake University Des Moines, Iowa	Prof. Roy L. Miller College of Political Science		X	X	X
Iowa State College of A. & M. Arts Ames, Iowa	Dean T. R. Agg College of Engineering	X	X	X	
St. Ambrose College Davenport, Iowa	M. E. Casey Prof. of Commerce		X	X	X
State University of Iowa Iowa City, Iowa	Dean F. M. Dawson College of Engineering	X	X	X	X
KANSAS					
Kansas State College of Agriculture and Applied Science Manhattan, Kansas	W. W. Carlson Prof., Dept. of Shop Practice	X	X	X	X
University of Kansas 109 Fraser Hall Lawrence, Kansas	Guy V. Keeler Director, ESMWT	X	X	X	X
KENTUCKY					
University of Kentucky Lexington, Kentucky	D. V. Terrell Asst. Dean of Engineering	X	X	X	X
University of Louisville Louisville, Kentucky	Asst. Prof. John M. Houchens Coordinator	X	X	X	X
LOUISIANA					
Centenary College of Louisiana Shreveport, Louisiana	Robert S. See Assoc. Prof. of Commerce		X		X
Louisiana Polytechnic Inst. Ruston, Louisiana	H. J. Nethken Acting Dean School of Engrg.	X	X		

*E - Engineering
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P - Physics
M - Management

LOUISIANA (continued)	Institutional Representative	*Approved for E	C	P	M
Louisiana State University Baton Rouge, Louisiana	G. F. Matthes Assoc. Prof. of Mech. Engrg.	X	X	X	X
Loyola University New Orleans, Louisiana	Assoc. Prof. H. T. Fleddermann		X	X	X
Southern Univ. & A.& M.College Scotlandville, Louisiana	President F. G. Clark		X		
Southwestern Louisiana Inst. Lafayette, Louisiana	Dean G. G. Hughes College of Engineering	X	X		X
Tulane University New Orleans, Louisiana	Dean James M. Robert College of Engineering	X	X	X	X
MAINE					
Bates College Lewiston, Maine	Raymond L. Kendall Assoc. Prof. of Education		X	X	
University of Maine Orono, Maine	Prof. Benjamin C. Kent Head of the Dept. of Engineering Drafting	X	X	X	X
MARYLAND					
Johns Hopkins University Baltimore, Maryland	Dean W. B. Kouwenhoven School of Engineering	X	X	X	X
University of Baltimore Baltimore, Maryland	Mr. Clifford C. James Dir. of Wartime Activities				X
University of Maryland College Park, Maryland	Wilson P. Green Assoc. Prof. of Mech. Engrg.	X	X	X	X
MASSACHUSETTS					
American International College Springfield, Massachusetts	Mr. Richard S. Ullery Director of Placement		X		X
Boston College Chestnut Hill, Newton, Mass.	Frank Malcolm Gager Assoc. Prof. of Physics		X	X	X

*E - Engineering
C - Chemistry
P - Physics
M - Management

MASSACHUSETTS (continued)	Institutional Representative	*Approved for E	C	P	M
Boston University 688 Boylston St. Boston, Massachusetts	Dean Wm. G. Sutcliffe College of Bus. Admin.		X	X	X
Clark University Worcester, Massachusetts	Roy C. Gunter Assoc. Prof. of Physics		X	X	
Harvard University Cambridge, Massachusetts	Chester L. Dawes Assoc. Prof. of Elec. Engrg.	X	X	X	X
Lowell Textile Institute Lowell, Massachusetts	Charles H. Eames President	X	X		
Massachusetts Inst. of Tech. Cambridge, Massachusetts	Prof. Raymond D. Douglass Chairman, Committee on Special Training Programs	X	X	X	X
Massachusetts State College Amherst, Massachusetts	C. I. Gunness Prof. of Engineering	X	X	X	X
Northeastern University Boston, Massachusetts	Prof. Frederick R. Henderson Asst. Dean of Engineering	X	X	X	X
Simmons College Boston, Massachusetts	Prof. John A. Timm Director, School of Science		X		X
Smith College Northampton, Massachusetts	Nora M. Mohler Assoc. Prof. of Physics		X	X	
Tufts College Medford, Massachusetts	Dean Harry P. Burden College of Engineering	X	X	X	X
Wellesley College Wellesley, Massachusetts	Louise S. McDowell Prof. of Physics		X	X	
Worcester Polytechnic Inst. Worcester, Massachusetts	Dean Francis W. Roys College of Engineering	X	X	X	
MICHIGAN					
Detroit Institute of Tech. Detroit, Michigan	Dean C. C. Winn College of Engineering	X			X
Lawrence Inst. of Tech. Highland Park, Michigan	E. G. Lawrence President	X			

*E - Engineering
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P - Physics
M - Management

MICHIGAN (continued)	Institutional Representative	*Approved for E	C	P	M
Michigan College of Mining & Tech. Houghton, Michigan	Dr. G. C. Dillman President	X	X		
Michigan State College East Lansing, Michigan	Prof. Lorin G. Miller Head, Mech. Engrg. Dept.	X	X	X	X
University of Detroit Detroit, Michigan	Dean C. J. Freund College of Engineering	X	X	X	X
University of Michigan Ann Arbor, Michigan	Dean Ivan C. Crawford College of Engineering	X	X	X	X
Wayne University Detroit, Michigan	Dean Arthur R. Carr College of Engineering	X	X	X	X
MINNESOTA					
St. Olaf College Northfield, Minnesota	Peter E. Fossum Assoc. Prof. of Physics		X	X	
University of Minnesota Minneapolis, Minnesota	Dr. Richard R. Price Dir., Extension Division	X	X	X	X
MISSISSIPPI					
Mississippi State College State College, Mississippi	Dean L. L. Patterson School of Engineering	X	X	X	X
University of Mississippi University, Mississippi	Dean Lee H. Johnson College of Engineering	X	X		X
MISSOURI					
Lincoln University Jefferson City, Missouri	Albert A. Kildare Professor of Physics		X	X	X
Missouri School of Mines & Metallurgy Rolla, Missouri	E. W. Carlton Professor of Structural Engrg.	X	X	X	
St. Louis University St. Louis, Missouri	Rev. Thomas M. Knapp, S.J. Regent, School of Commerce & Finance		X	X	X

*E - Engineering
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P - Physics
M - Management

	Institutional Representative	*Approved for E	C	P	M
MISSOURI (continued)					
University of Missouri Columbia, Missouri	Prof. Harry Rubey Dir., Naval Training School	X	X	X	X
Washington University St. Louis, Missouri	Prof. Harry G. Hake School of Engineering	X	X	X	X
MONTANA					
Montana School of Mines Butte, Montana	Francis A. Thomson President	X			
Montana State College Bozeman, Montana	E. W. Schilling Acting Dean, College of Engrg.	X	X	X	
NEBRASKA					
Doane College Crete, Nebraska	Prof. E. Russell Wightman Chairman, Physics Dept.			X	
University of Nebraska Lincoln, Nebraska	Dean O. J. Ferguson College of Engineering	X	X	X	X
NEVADA					
University of Nevada Reno, Nevada	S. W. Leifson Professor of Physics	X	X	X	
NEW HAMPSHIRE					
Dartmouth College Hanover, New Hampshire	Dean Frank W. Garran Dean of Thayer Sch. of Engrg.	X	X	X	X
University of New Hampshire Durham, New Hampshire	Leon W. Hitchcock Acting Dean	X	X		X
NEW JERSEY					
Newark College of Engineering Newark, New Jersey	Prof. H. N. Cummings Vice-President	X	X		

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NEW JERSEY (continued)	Institutional Representative	*Approved for E	C	P	M
Princeton University Princeton, New Jersey	Assoc. Prof. Frank A. Heacock Head of Dept. of Graphics	X	X	X	
Rider College Trenton, New Jersey	Mr. J. Goodner Gill Vice-President				X
Rutgers University New Brunswick, New Jersey	Dean Parker H. Daggett College of Engineering	X	X	X	X
Stevens Institute of Tech. Hoboken, New Jersey	Mr. Wm. J. Timberman, Jr. Dir., War Industries School	X	X	X	
University of Newark Newark, New Jersey	Mr. W. Layton Hall Educational Supervisor				X
NEW MEXICO					
New Mexico College of A.& M. Arts State College, New Mexico	Dean Daniel B. Jett College of Engineering	X	X	X	
University of New Mexico Albuquerque, New Mexico	Dean M. E. Farris College of Engineering	X	X	X	X
NEW YORK					
Brooklyn College Brooklyn, New York	Prof. Morris F. Weinrich Chairman of Physics Dept.		X	X	
Canisius College Buffalo, New York	Prof. Austin McTigue Chairman, Dept. of Physics		X	X	
The City College of the College of the City of New York New York, New York	Prof. William Allan Chairman, Department of Civil Engineering	X	X	X	X
Clarkson College of Technology Potsdam, New York	A. R. Powers Prof. of Elec. Engineering	X	X		X
Columbia University New York, New York	Prof. A. Dexter Hinckley Instructor in Elec. Engrg.	X	X	X	X
The Cooper Union Cooper Square New York, New York	Dr. Louis M. Heil Prof. of Physics & Head of Department	X			

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NEW YORK (continued)	Institutional Representative	*Approved for E	C	P	M
Cornell University Ithaca, New York	Prof. Walter L. Conwell College of Engineering	X	X	X	X
Hofstra College Hempstead, New York	J. George Lutz Assoc. Prof., Chemistry Dept.		X	X	
Hunter College of the City of New York 695 Park Avenue New York, New York	Dr. Carl V. Noll		X	X	X
Long Island University 300 Pearl Street Brooklyn, New York	Prof. Henry M. Davis Chairman, Physics Dept.		X	X	X
Manhattan College New York, New York	Prof. Clarence J. Velz Director, ESMWT	X	X		X
New York University New York, New York	Dean Thorndike Saville College of Engineering	X	X	X	X
Niagara University Niagara University, New York	Arthur W. Sherman Professor of Accounting		X		X
Polytechnic Institute of Brooklyn 85 Livingston Street Brooklyn, New York	E. J. Squire Professor, Civil Engineering	X	X	X	
Polytechnic Institute of Brooklyn (Defense Training Institute) 85 Livingston Street Brooklyn, New York	E. J. Squire Professor, Civil Engineering	X	X	X	
Pratt Institute Brooklyn, New York	Prof. H. Russell Beatty Head, Dept. of Industrial Mngmt.	X			
Rensselaer Polytechnic Institute Troy, New York	Stanley B. Wiltse Professor, Elec. Engrg.	X	X	X	X
St. Bonaventure College St. Bonaventure, New York	Mr. John L. Worden Registrar, Graduate Division		X	X	X
Syracuse University Syracuse, New York	Dean Louis Mitchell College of Applied Science	X	X	X	X
Union College Schenectady, New York	Mortimer F. Sayre Prof. of Applied Mechanics	X	X	X	

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NEW YORK (continued)	Institutional Representative	*Approved for E	C	P	M
University of Buffalo Buffalo, New York	Dean Lewis A. Froman		X	X	X
University of Rochester Rochester, New York	Prof. J. Lawrence Hill, Jr. Asst. Prof., Mech. Engineering	X	X	X	
Vassar College Poughkeepsie, New York	Paul A. Northrop Professor of Physics		X	X*	
NORTH CAROLINA					
Agricultural and Technical College Greensboro, North Carolina	Dean J. M. Martsena School of Mech. Arts	X	X		
Duke University Durham, North Carolina	Mr. Alfred S. Brower Administrative Assistant	X	X	X	X
North Carolina College for Negroes Durham, North Carolina	Dr. W. H. Robinson Head, Dept. of Physics		X		X
North Carolina State College Raleigh, North Carolina	Prof. Edward W. Ruggles Director, ESMWT	X	X	X	
University of North Carolina Chapel Hill, North Carolina	Prof. Russell M. Grumman Dir., University Extension Div.		X	X	X
NORTH DAKOTA					
North Dakota Agricultural College Fargo, North Dakota	Mr. E. Murray Schaetzel Coordinator,	X	X		
University of North Dakota Grand Forks, North Dakota	Dean L. C. Harrington College of Engineering	X	X	X	X
OHIO					
Antioch College Yellow Springs, Ohio	Robert A. Voelker Asst. Prof. of Civil Engrg.	X	X	X	X
Case School of Applied Science Cleveland, Ohio	Prof. Clyde A. McKeeman Director of War Training	X	X	X	

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OHIO (continued)	Institutional Representative	*Approved for E	C	P	M
Fenn College Cleveland, Ohio	Max B. Robinson Acting Dean of Engineering	X			X
Heidelberg College Tiffin, Ohio	Dr. F. D. Lemke Dean of the College		X		
Miami University Oxford, Ohio	Dr. C. W. Kreger Asst. Dean, College of Lib. Arts		X	X	X
Ohio Northern University Ada, Ohio	Dean John A. Needy College of Engineering	X	X		X
Ohio State University Columbus, Ohio	Prof. Harry E. Nold Director, ESMWT	X	X	X	X
Ohio University Athens, Ohio	Mr. George C. K. Johnson	X	X	X	X
University of Akron Akron, Ohio	Mr. Leslie P. Hardy Director of Adult Education	X	X	X	X
University of Cincinnati Cincinnati, Ohio	Dean R. C. Gowdy College of Engrg. & Commerce	X	X	X	X
University of Dayton Dayton, Ohio	Dean M. E. Haas College of Engineering	X	X		X
University of Toledo Toledo, Ohio	Dean Delos M. Palmer College of Engineering	X	X	X	X
Western Reserve University Cleveland, Ohio	Dr. Webster G. Simon Vice-President		X	X	X
Wilberforce University Wilberforce, Ohio	President Charles H. Wesley		X		X
Youngstown College Youngstown, Ohio	Dr. E. D. Scudder Head, Dept. of Chemistry		X		
OKLAHOMA					
Langston University Langston, Oklahoma	Prof. E. A. Miller Dir., Div. of Industrial Education	X	X	X	

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OKLAHOMA (continued)					
Oklahoma Agricultural and Mechanical College Stillwater, Oklahoma	Roy R. Tompkins Dept. of Ed. Extension	X	X	X	X
Oklahoma City University Oklahoma City, Oklahoma	G. Calvin Brous Professor of Chemistry		X		X
University of Oklahoma Norman, Oklahoma	Prof. Lowell C. Brown Dir., In-service Education	X	X	X	X
University of Tulsa Tulsa, Oklahoma	Dean R. L. Langenheim College of Engineering	X	X		X
OREGON					
Oregon State College Corvallis, Oregon	Dean R. H. Dearborn College of Engineering	X	X	X	
PENNSYLVANIA					
Bryn Mawr College Bryn Mawr, Pennsylvania	Edward H. Watson Professor of Geology		X	X	
Bucknell University Lewisburg, Pennsylvania	Prof. George A. Irland Chairman of Engrg. Group	X	X		
Carnegie Inst. of Technology Pittsburgh, Pennsylvania	Webster N. Jones Director, College of Engrg.	X	X	X	X
Drexel Inst. of Technology Philadelphia, Pennsylvania	William J. Stevens Assoc. Prof. of Mech. Engrg.	X	X		X
Franklin & Marshall College Lancaster, Pennsylvania	Assoc. Prof. Harold Fischer		X	X	X
Grove City College Grove City, Pennsylvania	C. S. Hoyt Professor of Chemistry	X	X		
Haverford College Haverford, Pennsylvania	Prof. Leon Hawley Rittenhouse Chairman, Dept. of Engrg.	X	X	X	
Lafayette College Easton, Pennsylvania	William S. Lohr Prof. of Civil Engineering	X	X	X	
Lehigh University Bethlehem, Pennsylvania	Dean A. C. Callen College of Engineering	X	X	X	X

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PENNSYLVANIA (continued)	Institutional Representative	*Approved for E	C	P	M
Muhlenberg College Allentown, Pennsylvania	Truman Koehler Asst. Prof. of Mathematics		X	X	
Pennsylvania Military College Chester, Pennsylvania	Frank L. Martin Professor of Engineering	X			
Pennsylvania State College State College, Pennsylvania	Dr. R. D. Hetzel President	X	X	X	X
Swarthmore College Swarthmore, Pennsylvania	Prof. Scott B. Lilly Chairman, Division of Engrg.	X	X	X	
Temple University Philadelphia, Pennsylvania	Mr. Charles E. Metzger Dir., Evening Technical School		X	X	X
University of Pennsylvania Philadelphia, Pennsylvania	Dr. Paul H. Musser Admin. Vice-President	X	X	X	X
University of Pittsburgh Pittsburgh, Pennsylvania	Prof. J. S. Lambie Director, ESMWT	X	X	X	X
Wilson College Chambersburg, Pennsylvania	Dorothy W. Weeks Professor of Physics		X	X	
Villanova College Villanova, Pennsylvania	J. Stanley Morehouse Dean of Engineering School	X	X		
RHODE ISLAND					
Brown University Providence, Rhode Island	Frederick N. Tompkins Assoc. Prof. of Engineering	X	X	X	
Rhode Island State College Kingston, Rhode Island	Dean Asa S. Knowles Dir. of Industrial Extension	X	X		X
SOUTH CAROLINA					
The Citadel Charleston, South Carolina	Prof. L. S. LeTellier Head, Dept. of Engineering	X	X	X	X
Clemson Agricultural College Clemson, South Carolina	Dean S. B. Earle School of Engineering	X	X		
Colored Normal, Agric., Industrial and Mechanical College Orangeburg, South Carolina	Mr. C. E. Clinkscales Asst. to the President	X	X		X

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SOUTH CAROLINA (continued)	Institutional Representative	*Approved for E	C	P	M
Furman University Greenville, South Carolina	Brant Bonner Assoc. Prof. of Economics and Bus. Admin.		X		X
University of South Carolina Columbia, South Carolina	Robert L. Sumwalt Prof. of Civil Engineering	X	X	X	X
SOUTH DAKOTA					
South Dakota State College of A. & M. Arts Brookings, South Dakota	Prof. H. B. Blodgett Acting Dean of Engineering	X	X	X	
University of South Dakota Vermillion, South Dakota	Mr. S. S. Shaw Director of Extension		X	X	X
TENNESSEE					
Fisk University Nashville, Tennessee	Mr. Harold F. Smith Director of Lower Division		X		
Tennessee Polytechnic Institute Cookeville, Tennessee	Mr. J. M. Henderson Director, Department of Engrg. and Industrial Arts	X	X		
University of Tennessee Knoxville, Tennessee	Dean N. W. Dougherty College of Engineering	X	X	X	X
Vanderbilt University Nashville, Tennessee	Dean Fred J. Lewis School of Engineering	X	X	X	X
TEXAS					
Agricultural & Mechanical College of Texas College Station, Texas	Prof. J. T. L. McNew Head, Civil Engrg. Dept.	X	X	X	X
Baylor University Waco, Texas	Dr. Monroe S. Carroll Chairman, School of Business		X	X	X
East Texas State Teachers College Commerce, Texas	A. C. Ferguson Dean of the College		X		X

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TEXAS (continued)	Institutional Representative	*Approved for E	C	P	M
Hardin-Simmons University Abilene, Texas	Dean L. Q. Campbell		X		X
North Texas State Teachers College Denton, Texas	J. K. G. Silvey Professor of Biology		X	X	
Rice Institute Houston, Texas	Professor C. W. Heaps Physics Department	X	X	X	
Southern Methodist University Dallas, Texas	Dean E. H. Flath College of Engineering	X	X		X
Texas Christian University Fort Worth, Texas	Colby D. Hall Dean of the University		X	X	X
Texas College of Arts and Ind. Kingsville, Texas	Dr. A. W. Straiton Acting Head, Engineering Dept.	X	X	X	
Texas College of Mines and Metallurgy El Paso, Texas	Dean Eugene M. Thomas College of Engineering	X			X
Texas Technological College Lubbock, Texas	Dean O. V. Adams College of Engineering	X	X	X	X
University of Houston Houston, Texas	Prof. Robert A. White Head, College of Business Admin.		X		X
University of Texas Austin, Texas	Prof. C. R. Granberry Coordinator, ESWT	X	X	X	X
West Texas State Teachers College Canyon, Texas	Mr. Virgil Honson Business Manager		X		X
UTAH					
Brigham Young University Provo, Utah	Prof. H. V. Hoyt Department Head				X
University of Utah Salt Lake City, Utah	Dean A. LeRoy Taylor School of Mines & Engrg.	X	X	X	X
Utah State Agricultural College Logan, Utah	Dean George D. Clyde College of Engineering	X			

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VERMONT	Institutional Representative	*Approved for E	C	P	M
Norwich University Northfield, Vermont	Major Walter D. Emerson Prof. of Mech. Engrg.	X	X		
University of Vermont Burlington, Vermont	Robert G. Chapman Prof. and Head, Mech. Engrg. Department	X	X	X	X
VIRGINIA					
College of William & Mary Williamsburg, Virginia	Prof. Charles F. Marsh		X	X	X
Hampton Institute Hampton, Virginia	Dr. B. A. Turner Supr., Ind. Arts & Trade Ed.	X	X		X
University of Richmond Richmond, Virginia	Dr. George M. Modlin Dir., Sch. Bus. Admin.		X	X	X
University of Virginia Charlottesville, Virginia	Lawrence R. Quarles Assoc. Prof. of Elec. Engrg.	X	X	X	X
Virginia Military Institute Lexington, Virginia	Col. R. A. Marr, Jr. Head, Dept. of Civil Engrg.	X	X		
Virginia Polytechnic Institute Blacksburg, Virginia	Dean Earle B. Norris College of Engineering	X	X	X	X
Virginia State College for Negroes Ettrick, Virginia	Prof. J. M. Hunter		X	X	X
Virginia Union University Richmond, Virginia	Dean Thomas H. Henderson		X		
WASHINGTON					
Gonzaga University Spokane, Washington	Dean James G. McGivern College of Engineering	X	X		
State College of Washington Pullman, Washington	Dean R. D. Sloan College Mech. Arts & Engrg.	X	X	X	X
University of Washington Seattle, Washington	Dean E. A. Loew College of Engineering	X	X	X	X

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WEST VIRGINIA					
West Virginia State College Institute, West Virginia	Paul J. Moore Assoc. Prof. of Chemistry		X	X	X
West Virginia University Morgantown, West Virginia	Dean R. P. Davis College of Engineering	X	X	X	X
WISCONSIN					
Marquette University Milwaukee, Wisconsin	Prof. John Schoen	X	X	X	X
University of Wisconsin Madison, Wisconsin	Dean F. O. Holt College of Engineering	X	X	X	X
WYOMING					
University of Wyoming Laramie, Wyoming	H. T. Person Prof. of Civil Engineering	X	X	X	X
DISTRICT OF COLUMBIA					
Catholic University of America Washington, D. C.	Dr. Thomas J. MacKavanagh Chairman, PSMWT	X	X	X	X
George Washington University Washington, D. C.	Dean Frederick M. Feiker School of Engineering	X	X	X	X
Howard University Washington, D. C.	Dean L. K. Downing School of Engrg. & Architecture	X	X		X
HAWAII					
University of Hawaii Honolulu, Hawaii	Pres. Cregg M. Sinclair	X	X	X	
PUERTO RICO					
University of Puerto Rico Mayaguez, Puerto Rico	Dean R. Menendez Ramos	X			

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